

water-resistant film.

=> d his

(FILE 'HOME' ENTERED AT 12:36:37 ON 10 OCT 2006)

FILE 'CAPLUS, MEDLINE' ENTERED AT 12:37:57 ON 10 OCT 2006

L1	23 S PULLULAN (P) ALGINATE? (P) FILM?
L2	3 S L1 AND CAST?
L3	20 S L1 NOT L2
L4	0 S L3 AND VISCOS?
L5	1 S L3 AND VISCO?
L6	19 S L3 NOT L5
L7	5 S L6 AND DISSOLV?
L8	14 S L6 NOT L7
L9	2 S L8 AND MOUTH?
L10	12 S L8 NOT L9
L11	26 S PULLULAN? (P) ALGIN? (P) FILM?
L12	3 S L11 NOT L1
L13	3 S PULLULAN? (P) ALGIN? (P) RAPID?
L14	5 S PULLULAN? (P) DOSAGE? (P) RAPID?
L15	4 S PULLULAN? (P) VISCO? (P) CAST?
L16	26 S PULLULAN? (P) FILM? (P) CAST?
L17	24 S L16 NOT L1
L18	24 S L17 NOT L11
L19	22 S L17 NOT L15
L20	3 S PULLULAN? (P) ALGIN? (P) CAST?

water-resistant film.

=> d his

(FILE 'HOME' ENTERED AT 12:36:37 ON 10 OCT 2006)

FILE 'CAPLUS, MEDLINE' ENTERED AT 12:37:57 ON 10 OCT 2006

L1	23 S PULLULAN (P) ALGINATE? (P) FILM?
L2	3 S L1 AND CAST?
L3	20 S L1 NOT L2
L4	0 S L3 AND VISCOS?
L5	1 S L3 AND VISCO?
L6	19 S L3 NOT L5
L7	5 S L6 AND DISSOLV?
L8	14 S L6 NOT L7
L9	2 S L8 AND MOUTH?
L10	12 S L8 NOT L9
L11	26 S PULLULAN? (P) ALGIN? (P) FILM?
L12	3 S L11 NOT L1
L13	3 S PULLULAN? (P) ALGIN? (P) RAPID?
L14	5 S PULLULAN? (P) DOSAGE? (P) RAPID?
L15	4 S PULLULAN? (P) VISCO? (P) CAST?
L16	26 S PULLULAN? (P) FILM? (P) CAST?
L17	24 S L16 NOT L1
L18	24 S L17 NOT L11
L19	22 S L17 NOT L15
L20	3 S PULLULAN? (P) ALGIN? (P) CAST?

L2 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2004:120708 CAPLUS  
DOCUMENT NUMBER: 140:169672  
TITLE: Process for making orally consumable biopolymeric films  
INVENTOR(S): Auffret, Anthony David; Benee, Lisa Suzanne  
PATENT ASSIGNEE(S): Pfizer Limited, UK; Pfizer Inc.  
SOURCE: PCT Int. Appl., 24 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004012720	A1	20040212	WO 2003-IB3244	20030716
WO 2004012720	C1	20040415		
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
CA 2493786	AA	20040212	CA 2003-2493786	20030716
AU 2003247083	A1	20040223	AU 2003-247083	20030716
EP 1534253	A1	20050601	EP 2003-766550	20030716
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK			
BR 2003012993	A	20050628	BR 2003-12993	20030716
JP 2006503003	T2	20060126	JP 2004-525675	20030716
US 2004131661	A1	20040708	US 2003-626811	20030723
PRIORITY APPLN. INFO.:			GB 2002-17382	A 20020726
			US 2002-403887P	P 20020816
			WO 2003-IB3244	W 20030716

AB The present invention is concerned with a process for making rapidly dissolving and dispersing dosage forms, particularly orally consumable films, made of a hydrated polymer comprising pullulan and sodium alginate having a viscosity suitable for casting, for the delivery of pharmaceutically active agents. For example, pullulan (20.0 g) and sodium alginate (1.0 g) were dissolved in water (100 mL) and the pH of the resulting gel was adjusted to 3.5 with hydrochloric acid. To 31.7 g of the gel was added ibuprofen (3.5 g) and a film was prepared by applying the gel to a glass plate, and the resulting film was dried at 80° for 30 min. When dry, the film provided an ibuprofen concentration of 36.6% weight/weight, i.e., about 32 mg of ibuprofen in a film 2.2 cm x 3.2 cm.

L2 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2002:904322 CAPLUS  
DOCUMENT NUMBER: 137:389152  
TITLE: Simethicone and polysorbate 80 as weight gain enhancers for coating compositions  
INVENTOR(S): Szymczak, Christopher; Gulian, Cynthia; Gowan, Walter G., Jr.  
PATENT ASSIGNEE(S): McNeil-PPC, Inc., USA  
SOURCE: Eur. Pat. Appl., 20 pp.  
CODEN: EPXXDW

DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 4  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1260217	A2	20021127	EP 2002-253340	20020514
EP 1260217	A3	20041229		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
US 2003070584	A1	20030417	US 2002-122999	20020412
US 2003072729	A1	20030417	US 2002-122498	20020415
ZA 2002003828	A	20031114	ZA 2002-3828	20020514
ZA 2002003833	A	20031114	ZA 2002-3833	20020514
PRIORITY APPLN. INFO.:			US 2001-291127P	P 20010515
			US 2001-325726P	P 20010928
			US 2002-122999	A 20020412
			US 2002-122498	A 20020415

AB A film forming composition comprised of (i) a film former, selected from polyvinyl alc., starch derivs., pullulan, cellulose derivs., etc., and (b) a weight gain enhancer, selected from simethicone, polysorbate 80 and their mixts., is described. The weight gain enhancer is used in an amount sufficient to increase the weight gain of the film forming composition on a substrate when dried. The film forming composition further comprises a hydrocolloid, selected from alginates, natural gums, pectin, chitin, cyclodextrin, chitosan, etc., and a coloring agent, selected from azo, quinophthalone, triphenylmethane, xanthene or indigoid dyes, iron oxides, iron hydroxides, titanium dioxide, and natural dyes. For example, the film forming composition contains 40-99.9% of a hydroxypropyl Me cellulose film former, 0.5-5% of a xanthan gum hydrocolloid, and 0.01-0.25% simethicone.

L2 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1978:154728 CAPLUS  
DOCUMENT NUMBER: 88:154728  
TITLE: Water-resistant moldings based on pullulan  
INVENTOR(S): Mori, Atsuo; Namazue, Isamu; Nakae, Kiyohiko; Terazawa, Takayuki; Ochiai, Hidekazu  
PATENT ASSIGNEE(S): Sumitomo Chemical Co., Ltd., Japan; Hayashibara Biochemical Laboratories, Inc.  
SOURCE: Ger. Offen., 12 pp.  
CODEN: GWXXBX  
DOCUMENT TYPE: Patent  
LANGUAGE: German  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2737947	A1	19780302	DE 1977-2737947	19770823
JP 53026867	A2	19780313	JP 1976-101301	19760824
FR 2362888	A1	19780324	FR 1977-25525	19770822
FR 2362888	B1	19811016		
GB 1559644	A	19800123	GB 1977-35313	19770823
PRIORITY APPLN. INFO.:			JP 1976-101301	A 19760824

AB Moldings prepared from a mixture of pullulan [9057-02-7] and Na alginate [9005-38-3] were treated with aqueous CaCl<sub>2</sub> to prepare water-resistant moldings. Thus, a solution of 95:5 pullulan-Na alginate was cast on a surface and dried to prepare a film which was immersed in 5% aqueous CaCl<sub>2</sub> for 30 s to prepare a transparent, water-resistant film.

L5 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2003:426677 CAPLUS

DOCUMENT NUMBER: 139:163795

TITLE: Characteristics of pullulan-based edible films

AUTHOR(S): Rhim, Jong-Whan

CORPORATE SOURCE: Department of Food Engineering, Mokpo National University, Chonnam, 534-729, S. Korea

SOURCE: Food Science and Biotechnology (2003), 12(2), 161-165  
CODEN: FSBOBR; ISSN: 1226-7708

PUBLISHER: Korean Society of Food Science and Technology

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Properties of pullulan films with or without gelling agents were determined. Tensile strength (TS), elongation at break (E), water vapor permeability (WVP), and water solubility (WS) of pullulan films were 29.6-54.13 MPa, 4.7-33.8%, 0.92-1.08 ng·m/m<sup>2</sup>·s-Pa, and 40.4-98.4%, resp. Phys. properties of pullulan films were greatly influenced by adding gelling agents. TS of the films increased significantly ( $p < 0.05$ ) by adding gelling agents except  $\kappa$ -carrageenan. WVP of the pullulan films decreased slightly and WS decreased significantly ( $p < 0.05$ ) by adding gelling agents. Among the gelling agents tested,  $\kappa$ -carrageenan was the most effective in modifying the phys. strength (decrease in TS by the factor of 1.5 and increase in E by the factor of 7.2), and gellan was the most effective in reducing WS (by the factor of 2.4) of the pullulan-based films.

REFERENCE COUNT: 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 1 OF 5 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2006:876516 CAPLUS

DOCUMENT NUMBER: 145:298875

TITLE: Film for reducing and removing mouth odor having convenient usage and portability, and being slowly dissolved in mouth and composition for manufacturing same

INVENTOR(S): Kim, Hoo Deok; Kim, Young Ho

PATENT ASSIGNEE(S): Lg Household & Health Care Ltd., S. Korea

SOURCE: Repub. Korean Kongkae Taeho Kongbo, No pp. given

CODEN: KRXXA7

DOCUMENT TYPE: Patent

LANGUAGE: Korean

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	---	-----	-----	-----
KR 2005029906	A	20050329	KR 2003-66176	20030924
PRIORITY APPLN. INFO.:			KR 2003-66176	20030924

AB A film is provided for reducing and removing mouth odor and a composition for manufacturing the same film; the film has convenient usage and portability, and is slowly dissolved in a mouth to continuously inhibit and remove mouth odor such as mercaptans and garlic odor. The film for reducing and removing mouth odor comprises cyclodextrin as an effective component which is uniformly dispersed in the aqueous film substrate, wherein the amount of cyclodextrin added is 0.01 to 20.0%; the cyclodextrin is selected from alpha-cyclodextrin, beta-cyclodextrin, gamma-cyclodextrin and derivs. thereof; and the aqueous film substrate is water-soluble polymer selected from pullulan, pectin, chitin, carrageenan, xanthan gum, alginate, cellulose, dextrin and a mixture thereof. The composition for manufacturing the same film comprises 0.01 to 20.0% cyclodextrin; 0.5 to 35% water-soluble polymer; and 0.05 to 5.0% emulsifying agent.

L7 ANSWER 2 OF 5 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2006:876515 CAPLUS

DOCUMENT NUMBER: 145:298874

TITLE: Film for reducing and removing mouth odor having safety to human, convenient usage and portability, and being slowly dissolved in mouth and composition for manufacturing same

INVENTOR(S): Kim, Hoo Deok; Kim, Young Ho

PATENT ASSIGNEE(S): Lg Household & Health Care Ltd., S. Korea

SOURCE: Repub. Korean Kongkae Taeho Kongbo, No pp. given

CODEN: KRXXA7

DOCUMENT TYPE: Patent

LANGUAGE: Korean

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	---	-----	-----	-----
KR 2005029905	A	20050329	KR 2003-66175	20030924
PRIORITY APPLN. INFO.:			KR 2003-66175	20030924

AB A film for reducing and removing mouth odor and a composition for manufacturing the same film are provided; the film is safe in human, it has convenient usage and portability, and is slowly dissolved in the mouth to continuously remove mouth odor such as mercaptans and garlic odor. The film for reducing and removing mouth odor comprises an extract selected from green tea extract, Chaenomeles sinensis extract, citron extract and a mixture thereof as an effective component

which is uniformly dispersed in the aqueous film substrate, wherein the amount of the extract added is 0.01 to 20.0%; and the aqueous film substrate is water-soluble polymer selected from pullulan, pectin, chitin, carrageenan, xanthan gum, alginate, cellulose, dextrin and a mixture thereof. The composition for manufacturing the same film comprises 0.01 to 20.0% of the extract selected from green tea extract, Chaenomeles sinensis extract, citron extract and a mixture thereof, 0.5 to 35% water-soluble polymer; and 0.05 to 5.0% emulsifying agent.

L7 ANSWER 3 OF 5 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2004:853282 CAPLUS  
DOCUMENT NUMBER: 142:50779  
TITLE: Control of fungi and insects in apple orchard using chitin or chitosan  
INVENTOR(S): Um, Jae Yul; Lee, Yong Hyun; Park, Dong Chan; Lee, Sug Ji  
PATENT ASSIGNEE(S): S. Korea  
SOURCE: Repub. Korea, No pp. given  
CODEN: KRXXFC  
DOCUMENT TYPE: Patent  
LANGUAGE: Korean  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
KR 192659	B1	19990615	KR 1996-30278	19960720
PRIORITY APPLN. INFO.:			KR 1996-30278	19960720

AB A method of preventing harmful insects of apple orchards is provided which reduces the scattering amount and times of the agricultural chems. with a polymer coating method using chitin or chitosan as a main component. Chitin, chitosan, or the hydrates thereof, or the chitin derivs. such as carboxymethyl chitin, glycol chitin, ethyleneglycol chitin, and sulfated chitin is dissolved in water or weak acid solution to concentration of 0.5 to 30%. The solution is coated or sprayed on the infected sites of apply tree by harmful insects to form a polymer coating film which prevents the growth of a pathogen, the scattering of a spore, and the growth or propagation of harmful insects such as mites and aphids. The solution comprises further 0.5 to 50% of polyvinyl alc., polyvinyl acetate, polycaprolactone, polylactide, polyglycolide, aliphatic polyester, pullulan, dextran, carrageenan, alginate or xanthan gum.

L7 ANSWER 4 OF 5 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1994:603884 CAPLUS  
DOCUMENT NUMBER: 121:203884  
TITLE: Manufacture of water-resistant edible films with excellent heat-sealing properties.  
INVENTOR(S): Okumura, Zenji; Tanaka, Yoshinao  
PATENT ASSIGNEE(S): Osaka Kagaku Gokin Kk, Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 05308910	A2	19931122	JP 1992-139886	19920501
PRIORITY APPLN. INFO.:			JP 1992-139886	19920501

AB Edible films containing hydrophilic polymers (e.g. pullulan), crosslinking polysaccharide (e.g. Na alginate), polyvalent metal salts (e.g. CaCl<sub>2</sub>), and plasticizers (polyalcs. such as glycerol), are manufactured for use in packaging of hams, sausages, and other meat

products. Thus, 2 g Na alginate, 11 g pullulan, and 6 g glycerol was dissolved in 100 mL deionized water, stirred, and applied on an ethylene terephthalate film; a 5% Ca lactate was subsequently applied on the surface and dried to recover a water insol. and high heat-sealing (0.50 kg/15 mm width) edible film.

L7 ANSWER 5 OF 5 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1984:200984 CAPLUS  
DOCUMENT NUMBER: 100:200984  
TITLE: Surface protecting agent for lithographic plates  
PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 59029198	A2	19840216	JP 1982-138337	19820809
CA 1206302	A1	19860624	CA 1983-433215	19830726
PRIORITY APPLN. INFO.:			JP 1982-138337	A 19820809

AB Lithog. plate protective agent contains (1)  $\geq 1$  water-soluble and film-forming organic polymer selected from dextrin, soluble starch, soluble cellulose ether, soluble polyvinyl compds., pullulan or its derivs., stractan, and alginates, 5-35 weight%, and (2) alkali metal or ammonium salt of hexametaphosphoric acid 0.02-2 weight%. The agent retains the insensitivity of the nonimage areas and sensitivity of the image areas, and effectively protects the plate surface. Thus, dextrin with 95% solubility (Cream Dextrin; Matsutani Kagaku Kogyo) 140, dextrin with 90% solubility (White Detrin; same firm) 60 weight parts. were dissolved in H<sub>2</sub>O 800 weight parts at 40°. After cooling, 33% isobutylnaphthalene sulfonic acid Na salt 5, Na and NH<sub>4</sub> salts of hemametaphosphoric acid 2 weight parts each were dissolved to obtain the agent. It was coated on an exposed, developed and dried photosensitive material prepared by coating a mixture of (1) naphthoquinone-1,2-diazido-5-sulfonate of poly(hydroxyphenyl) obtained by polycondensation of acetone and pyrogallol, and (2) a novolac-type cresol-HCHO resin. The coating was removed after storage for 3 days at 60°, and the plates were used in printing. Clear prints were obtained with min. initial loss compare to a control run using protective agents outside the claim.



L9 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2003:222155 CAPLUS  
DOCUMENT NUMBER: 138:242911  
TITLE: Edible film formulations containing maltodextrin  
INVENTOR(S): Zyck, Daniel J.; Dzija, Michael R.; Chapdelaine, Albert H.  
PATENT ASSIGNEE(S): Wm. Wrigley Jr., Co., USA  
SOURCE: U.S. Pat. Appl. Publ., 7 pp., Cont.-in-part of U.S. Ser. No. 682,164.  
CODEN: USXXCO  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 2  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2003054039	A1	20030320	US 2002-44105	20020109
US 6740332	B2	20040525		
US 2003035841	A1	20030220	US 2001-682164	20010730
US 6656493	B2	20031202		
WO 2003011259	A1	20030213	WO 2002-US21591	20020709
WO 2003011259	C1	20030320		
W:	AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
EP 1453488	A1	20040908	EP 2002-756411	20020709
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK			
PRIORITY APPLN. INFO.:			US 2001-682164	A2 20010730
			US 2002-44105	A 20020109
			WO 2002-US21591	W 20020709

AB Improved edible films for mucoadhesion are provided. The films include at least three types film forming agents other than pullulan, such as maltodextrins, hydrocolloids and fillers. Preferably, the maltodextrin has a dextrose equivalent of less than 20. Medicaments and other additive agents can also be incorporated into the edible films. In this regard, the edible films can be utilized to deliver or release the medicaments into an oral cavity, such as a pH control agent, an oral care agent, a breath freshening agent, a pharmaceutical agent, a nutraceutical, a salivary stimulant, a vitamin, a mineral, an antimicrobial agent, an anti-plaque agent, an anti-gingivitis agent, and a tartar or caries control agent, thereby providing effective oral treatment with respect to, for example, oral cleansing and breath freshening. For example, a film was prepared containing maltodextrin 36.00%, sodium alginate 22.15%, microcryst. cellulose 20.00%, glycerin 7.30%, flavor 11.00%, lecithin 2.00%, sweetener 1.50%, and color 0.05%.

L9 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2003:117597 CAPLUS  
DOCUMENT NUMBER: 138:158577  
TITLE: Improved edible film formulations containing maltodextrin  
INVENTOR(S): Chapdelaine, Albert H.; Zyck, Daniel; Dzija, Michael J.  
PATENT ASSIGNEE(S): Wm. Wrigley Jr. Company, USA

SOURCE: PCT Int. Appl., 18 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003011259	A1	20030213	WO 2002-US21591	20020709
WO 2003011259	C1	20030320		
W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
US 2003035841	A1	20030220	US 2001-682164	20010730
US 6656493	B2	20031202		
US 2003054039	A1	20030320	US 2002-44105	20020109
US 6740332	B2	20040525		
EP 1453488	A1	20040908	EP 2002-756411	20020709
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK				
PRIORITY APPLN. INFO.:			US 2001-682164	A 20010730
			US 2002-44105	A 20020109
			WO 2002-US21591	W 20020709
AB Improved edible films for mucoadhesion are provided. The films include at least three types film forming agents other than pullulan, such as maltodextrins, hydrocolloids and fillers. Preferably, the maltodextrin has a dextrose equivalent of less than 20. Medicaments and other additive agents can also be incorporated into the edible films. In this regard, the edible films can be utilized to deliver or release the medicaments into an oral cavity, thereby providing effective oral treatment with respect to, for example, oral cleansing and breath freshening. For example, a film for oral hygiene was prepared containing maltodextrin 25.95%, sodium alginate 22.50%, microcryst. cellulose 25.75%, glycerin 12.25%, menthol 1.00%, chlorhexidine 1.85%, flavor 9.40%, sweetener 1.25%, and color 0.05%.				
REFERENCE COUNT:	1	THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT		

L10 ANSWER 1 OF 12 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2006:480873 CAPLUS  
DOCUMENT NUMBER: 145:47597  
TITLE: Water-soluble film perfume soap containing pullulan  
with cleaning and sterilizing effects  
INVENTOR(S): Sha, Decheng; Monzie, Bernard  
PATENT ASSIGNEE(S): Can.  
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 11 pp.  
CODEN: CNXXEV  
DOCUMENT TYPE: Patent  
LANGUAGE: Chinese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
CN 1772862	A	20060517	CN 2004-10086629	20041111

PRIORITY APPLN. INFO.: CN 2004-10086629 20041111

AB The title water-soluble film perfume soap is prepared from soap material 20-80 wt%, and water-soluble film forming material containing pullulan 20-80 wt%, wherein the soap material contains (by weight) surfactant 3-55%, bactericide 1-5%, skin care component 2-10%, soap perfume 1-5%, and coating agent (cyclodextrin) 1-5%.

L10 ANSWER 2 OF 12 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2006:84295 CAPLUS  
DOCUMENT NUMBER: 144:128048  
TITLE: Method of preparing refreshing tablet with liquid  
pullulan  
INVENTOR(S): Tong, Qunyi; Yu, Fengjun; Liang, Junying  
PATENT ASSIGNEE(S): Southern Yangtze University, Peop. Rep. China;  
Qingqing Foodstuff Co., Ltd.  
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 6 pp.  
CODEN: CNXXEV  
DOCUMENT TYPE: Patent  
LANGUAGE: Chinese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
CN 1602716	A	20050406	CN 2004-10065764	20041116

PRIORITY APPLN. INFO.: CN 2004-10065764 20041116

AB The title refreshing tablet contains 60-70% pullulan solution 35-40, acetic ester starch 23-27, sodium alginate 3-4, mint alc. 11-13, mint essence 6-7, eucalyptus oil 2-3, Me salicylate 2-3, polyoxyethylene sorbitan ester-80 0.6-0.7, monostearate glyceride 0.2-0.3, gum arabic 2-3, octenyl succinate starch ester 1-2, glycerol 1-2, sorbic alc. 1-2%, proper sweetening agent and pigment (lemon yellow or bright blue). The acetic ester starch can be substituted by hydroxypropyl starch, carboxymethyl starch, oxide starch, Me cellulose or CM-cellulose. The mint essence can be substituted by strawberry essence, lemon essence or thymol. The arabic gum can be substituted by carrageen gum, konjaku flour or gelatin. The sweetening agent is sucrose, glucose, gluside or Aspartame. The product is prepared by continuous filming process containing slurry material flowing to purple copper or stainless steel belt through 0.4-0.

L10 ANSWER 3 OF 12 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2005:1169492 CAPLUS  
DOCUMENT NUMBER: 144:329819  
TITLE: Dextranucrase production by Leuconostoc mesenteroides  
AUTHOR(S): Purama, Ravi Kiran; Goyal, Arun

CORPORATE SOURCE: Department of Biotechnology, Indian Institute of Technology Guwahati, Assam, 781 039, India  
 SOURCE: Indian Journal of Microbiology (2005), 45(2), 89-101  
 CODEN: IJMBAC; ISSN: 0046-8991  
 PUBLISHER: Association of Microbiologists of India  
 DOCUMENT TYPE: Journal; General Review  
 LANGUAGE: English

AB A review. Microbes produce an array of exopolysaccharides which form a biofilm around the cells facilitating attachment of the cells to surface, colonization and providing protection against unfavorable conditions. Xanthan, alginate, pullulan, dextran, alternan, levan and inulan are some of the examples. Dextran, alternan, levan and inulan are produced by a group of bacteria belonging to Lactobacillus family. These compds. are derived from sucrose derivs. like glucose and fructose, where glucose gets polymerized to dextran while fructose is used as energy source by the exocellular or cell membrane bound enzymes. The gram-pos. Leuconostoc mesenteroides NRRL B-512F, which synthesizes the extracellular homopolysaccharide dextran, is an extensively used organism for the industrial production of dextransucrase. Dextran gained importance owing to its applications in the pharmaceutical, food, photo film manufacturing and fine chemical industries. The maintenance and production media composition and culture conditions have been optimized for the large scale production of dextransucrase. Low cost carbon and nitrogen sources like sugar-beet molasses, corn steep liquor and wheat bran extract have been successfully employed for large-scale preparation of dextransucrase by fermentation process. Mutants were developed and fermentation techniques like batch, semi-continuous fermentation by free and immobilized cells were tried to economize com. production of dextransucrase. Present communication reviews the available information on cultural conditions and nutritional requirements for the production of dextransucrase by Leuconostoc sp.

REFERENCE COUNT: 85 THERE ARE 85 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 4 OF 12 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2004:902127 CAPLUS  
 DOCUMENT NUMBER: 141:370567  
 TITLE: Homogeneous, thermoreversible alginate films and soft capsules made therefrom  
 INVENTOR(S): Modliszewski, James J.; Ballard, Arthur D.; Sewall, Christopher J.; Blakemore, William R.; Riley, Peter J.  
 PATENT ASSIGNEE(S): FMC Corporation, USA  
 SOURCE: PCT Int. Appl., 49 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 9  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004091538	A2	20041028	WO 2004-US11907	20040414
WO 2004091538	A3	20050407		
WO 2004091538	B1	20050526		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,				

SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN,  
TD, TG

CA 2522298	AA	20041028	CA 2004-2522298	20040414
US 2005008677	A1	20050113	US 2004-824793	20040414
US 2005014852	A1	20050120	US 2004-824688	20040414
US 2005013847	A1	20050120	US 2004-824957	20040414
US 2005019374	A1	20050127	US 2004-824860	20040414
US 2005019294	A1	20050127	US 2004-824919	20040414
US 2005019295	A1	20050127	US 2004-824956	20040414
US 2005048185	A1	20050303	US 2004-824977	20040414
US 2005084516	A1	20050421	US 2004-824689	20040414
EP 1622594	A2	20060208	EP 2004-759583	20040414

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK

BR 2004009334	A	20060425	BR 2004-9334	20040414
CN 1791417	A	20060621	CN 2004-80013896	20040414
CN 1791388	A	20060621	CN 2004-80013902	20040414
CN 1791382	A	20060621	CN 2004-80013903	20040414
CN 1791389	A	20060621	CN 2004-80013907	20040414
CN 1791385	A	20060621	CN 2004-80014006	20040414
CN 1794979	A	20060628	CN 2004-80014023	20040414

PRIORITY APPLN. INFO.:

US 2003-462617P	P	20030414
US 2003-462721P	P	20030414
US 2003-462758P	P	20030414
US 2003-462783P	P	20030414
US 2003-462785P	P	20030414
US 2003-462792P	P	20030414
US 2003-462793P	P	20030414
US 2003-462794P	P	20030414
WO 2004-US11907	W	20040414

AB The present invention is directed to a homogeneous, thermoreversible gel film comprising a film forming amount of a water soluble, thermoreversible alginate, and optionally at least one of a plasticizer, a second film former, a bulking agent, and a pH controlling agent; and processes for the preparation thereof. The present invention is also directed to soft capsules and solid forms containing the gel film, as well as processes for the preparation

thereof. A formulation was prepared containing water 840.3, propylene glycol alginate 91.2, hydroxyethyl cellulose 1.9, kappa carrageenan 24.0, potassium citrate 2.9, starch 207.8, sorbitol 264.4, and glycerin 88.2 g. The formulation showed sufficient dry film strength for use in soft capsule manufacture

L10 ANSWER 5 OF 12 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2004:902118 CAPLUS

DOCUMENT NUMBER: 141:370561

TITLE: Delivery systems of homogeneous thermoreversible alginate films

INVENTOR(S): Ballard, Arthur D.; Sewall, Christopher J.;  
Modliszewski, James J.; Blakemore, William R.; Riley,  
Peter J.

PATENT ASSIGNEE(S): FMC Corporation, USA

SOURCE: PCT Int. Appl., 38 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 9

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
WO 2004091528	A2	20041028	WO 2004-US11600	20040414
WO 2004091528	A3	20050127		
WO 2004091528	B1	20050324		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,  
 CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,  
 GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,  
 LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI,  
 NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY,  
 TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW  
 RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ,  
 BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE,  
 ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,  
 SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN,  
 TD, TG

US 2005008677	A1	20050113	US 2004-824793	20040414
US 2005014852	A1	20050120	US 2004-824688	20040414
US 2005013847	A1	20050120	US 2004-824957	20040414
US 2005019374	A1	20050127	US 2004-824860	20040414
US 2005019294	A1	20050127	US 2004-824919	20040414
US 2005019295	A1	20050127	US 2004-824956	20040414
US 2005048185	A1	20050303	US 2004-824977	20040414
US 2005084516	A1	20050421	US 2004-824689	20040414
EP 1622588	A2	20060208	EP 2004-759551	20040414

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
 IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK

BR 2004009336	A	20060425	BR 2004-9336	20040414
CN 1791417	A	20060621	CN 2004-80013896	20040414
CN 1791388	A	20060621	CN 2004-80013902	20040414
CN 1791382	A	20060621	CN 2004-80013903	20040414
CN 1791389	A	20060621	CN 2004-80013907	20040414
CN 1791385	A	20060621	CN 2004-80014006	20040414
CN 1794979	A	20060628	CN 2004-80014023	20040414

PRIORITY APPLN. INFO.:

US 2003-462617P	P	20030414
US 2003-462721P	P	20030414
US 2003-462758P	P	20030414
US 2003-462783P	P	20030414
US 2003-462785P	P	20030414
US 2003-462792P	P	20030414
US 2003-462793P	P	20030414
US 2003-462794P	P	20030414
WO 2004-US11600	W	20040414

AB The present invention is directed to a delivery system comprising a homogeneous, thermoreversible gel film, wherein the gel film comprises: (i) a film forming amount of water soluble thermoreversible alginate and optionally at least one of a plasticizer, a second film former, a bulking agent, and a pH controlling agent; and (ii) an active substance. The present invention is also directed to a process for the manufacture thereof. A film formulation for preparation of capsule contained water 834.7, kappa-2 carrageenan 40.5, potassium alginate 31.5, propylene glycol alginate 18.0, M-100 227.3, sorbitol 272.2, and glycerin 90.8 g.

L10 ANSWER 6 OF 12 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2000:227714 CAPLUS

DOCUMENT NUMBER: 132:252698

TITLE: Preparation of modified starch film-forming compositions and applications thereof

INVENTOR(S): Scott, Robert Anthony; Cade, Dominique; He, Xiongwei

PATENT ASSIGNEE(S): Warner-Lambert Company, USA

SOURCE: PCT Int. Appl., 20 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----

WO 2000018835	A1	20000406	WO 1999-US18139	19990811
W: AE, AL, AU, BA, BB, BG, BR, CA, CN, CR, CU, CZ, DM, EE, GD, GE, HR, HU, ID, IL, IN, IS, JP, KP, KR, LC, LK, LR, LT, LV, MG, MK, MN, MX, NO, NZ, PL, RO, SG, SI, SK, SL, TR, TT, UA, UZ, VN, YU, ZA, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
FR 2783832	A1	20000331	FR 1998-12246	19980930
US 6635275	B1	20031021	US 1999-240504	19990129
CA 2344292	AA	20000406	CA 1999-2344292	19990811
AU 9953472	A1	20000417	AU 1999-53472	19990811
AU 762692	B2	20030703		
EP 1117736	A1	20010725	EP 1999-939129	19990811
EP 1117736	B1	20040714		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2002525412	T2	20020813	JP 2000-572289	19990811
AT 271096	E	20040715	AT 1999-939129	19990811
PT 1117736	T	20041029	PT 1999-939129	19990811
ES 2226418	T3	20050316	ES 1999-939129	19990811
US 2003211146	A1	20031113	US 2003-465508	20030619
US 2004105835	A1	20040603	US 2003-721489	20031125
PRIORITY APPLN. INFO.:			FR 1998-12246	A 19980930
			US 1999-240504	A 19990129
			WO 1999-US18139	W 19990811
			US 2003-465508	B1 20030619

AB The invention relates to compns. from modified starches, such as starch ethers or oxidized starch, more particularly hydroxypropylated starch (HPS) or hydroxylethylated starch (HES) for the use in pharmaceutical, veterinary, food, cosmetic or other products like films for wrapping food, aspics or jellies, preferably for predosed formulations like soft or hard capsules. The hard capsules obtained by the present invention with a conventional dipping molding process are similar to hard gelatine capsules (HGC). The film-forming composition consists of hydrocolloids and cation wherein the hydrocolloids are selected from alginates, agar gum, guar gum, locust bean gum (carob), carrageenan, tara gum, gum arabic, ghatti gum, Khaya grandifolia gum, tragacanth gum, karaya gum, pectin, arabian (araban), xanthan, gellan, starch, Konjac mannan, galactomannan, funoran, acetan, welan, rhamsan, furcelleran, succinoglycan, scleroglycan, schizophyllan, tamarind gum, curdlan, pullulan, and dextran.

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 7 OF 12 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1998:213867 CAPLUS

DOCUMENT NUMBER: 128:281985

TITLE: Effects of additives on the development of edible films

AUTHOR(S): Shih, Frederick F.

CORPORATE SOURCE: USDA, Agricultural Research Center, Southern Regional Research Center, New Orleans, LA, 70179, USA

SOURCE: Chemistry of Novel Foods, developed from a Symposium at the International Chemical Congress of Pacific Basin Societies, Honolulu, Dec. 17-22, 1995 (1997), Meeting Date 1995, 179-186. Editor(s): Spanier, Arthur M. Allured: Carol Stream, Ill.

CODEN: 65UZAE

DOCUMENT TYPE: Conference

LANGUAGE: English

AB Edible films were prepared using pullulan (a functional polysaccharide), rice starch, and soy protein. Additives were added to facilitate the formation of films and to develop films

with desirable characteristics. Films plasticized with polyethylene glycol, glycerol, or sorbitol showed various degrees of decrease in tensile strength and increase in water vapor permeability and elongation. The incorporation of propylene glycol alginate which crosslinked with the film components enhanced both film strength and resistance to water vapor.

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 8 OF 12 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1997:413361 CAPLUS

DOCUMENT NUMBER: 127:82993

TITLE: Development of functional corrugated fiberboard

AUTHOR(S): Nonomura, Toshio

CORPORATE SOURCE: Tokushima Prefect. Ind. Technol. Cent., Tokushima, 770, Japan

SOURCE: Kinoshi Kenkyu Kaishi (1997), Volume Date 1996, 35, 58-61

CODEN: KIKKDD; ISSN: 0288-5867

PUBLISHER: Kinoshi Kenkyukai

DOCUMENT TYPE: Journal

LANGUAGE: Japanese

AB To object the development of an environment-friendly packaging material with keeping the degree of freshness function, formation of biodegradable film (composed of sodium alginate and pullulan mixture) on the usual liner-boards was investigated. For the purpose of retaining the freshness of NABANA (rape blossoms: flowers of Brassica campestris) the functional corrugated fiberboard was prepared. The produced corrugated fiberboard was found to have the function of MA (modified atmospheric) packaging and freshness keeping effect on NABANA has been confirmed by its storage test in laboratory

L10 ANSWER 9 OF 12 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1996:338731 CAPLUS

DOCUMENT NUMBER: 125:8958

TITLE: Edible films from rice protein concentrate and pullulan

AUTHOR(S): Shih, Frederick F.

CORPORATE SOURCE: Southern Reg. Res. Cent., New Orleans, LA, 70179, USA

SOURCE: Cereal Chemistry (1996), 73(3), 406-409

CODEN: CECHAF; ISSN: 0009-0352

PUBLISHER: American Association of Cereal Chemists

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Edible films were prepared using a combination of rice protein concentrate and the polysaccharide pullulan. The protein-pullulan mixture with up to 50% protein concentrate could be case on a glass plate into films with tensile strength of about 18 MPa and water vapor permeability of 40 g + mil/m2 + day + mm Hg. Film strength and water vapor resistance were improved by the addition of small amts. of propylene glycol alginate under alkaline condition. Oils were also incorporated into the film for improved water vapor resistance.

L10 ANSWER 10 OF 12 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1995:375050 CAPLUS

DOCUMENT NUMBER: 122:142065

TITLE: Cosmetic packs containing water-soluble polymers, triglucopolysaccharides, and film-forming polymers

INVENTOR(S): Yagi, Hiroshi; Suzuki, Akiko

PATENT ASSIGNEE(S): Kao Corp, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF



DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 06329525	A2	19941129	JP 1993-118625	19930520

PRIORITY APPLN. INFO.: JP 1993-118625 19930520

AB Cosmetic packs contain (A) water-soluble polymers chosen from CM-cellulose Na, carrageenan, collagen, xanthan gum, Na alginate, and carboxyvinyl polymers, (B) triglucopolysaccharides, and (C) film-forming polymers. The cosmetics spread well and form strong films on the skin. Cosmetic pack containing Gohsenol EG 30 [poly(vinyl alc.)] 8.50, polyethylene glycol 2.00, Glucam E 20 3.00, 70% sorbitol solution 2.00, liquid isoparaffin 3.00, squalane 1.00, Rheodol SP-S 10 0.35, Rheodol TW-S 120 0.70, 55% EtOH 15.00, carboxymethyl chitin 0.80, CMC-12M31PTP (Na CMC) 0.30, Pullulan PI-20 (pullulan) 1.00, and H2O to 100 weight% was formulated.

L10 ANSWER 11 OF 12 CAPLUS COPYRIGHT 2006 ACS on STN  
ACCESSION NUMBER: 1988:130099 CAPLUS  
DOCUMENT NUMBER: 108:130099  
TITLE: Edible food films.  
AUTHOR(S): Ohkami, Takeo  
CORPORATE SOURCE: Osaka Kagaku Gokin K. K., Japan  
SOURCE: New Food Industry (1987), 29(8), 6-10  
CODEN: NYFIAM; ISSN: 0547-0277  
DOCUMENT TYPE: Journal; General Review  
LANGUAGE: Japanese

AB A review with no refs., on edible food films, from polysaccharide and protein materials, such as pullulan, collagen, alginate, and gelatin films, for food packaging and other uses.

L10 ANSWER 12 OF 12 CAPLUS COPYRIGHT 2006 ACS on STN  
ACCESSION NUMBER: 1987:623296 CAPLUS  
DOCUMENT NUMBER: 107:223296  
TITLE: Transdermal tapes for mucous membranes  
INVENTOR(S): Tatara, Mitsutoshi; Ishikawa, Shinichi; Maeda, Shingo; Morioka, Shigeo  
PATENT ASSIGNEE(S): Sato Pharmaceutical Co., Ltd., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 62135417	A2	19870618	JP 1985-275159	19851209
JP 07000553	B4	19950111		

PRIORITY APPLN. INFO.: JP 1985-275159 19851209

AB Slow-release transdermal tapes for mucous membranes are prepared consisting of an adhesive film containing pullulan and/or its derivs., laminated with another film preventing loss of pharmaceuticals into mucous fluids. A solvent (H2O:ethanol = 4:1) was added to a mixture of acetylpullulan 10, a soluble azulene 0.6, fatty acid sucrose ester 2.0, and glycerin 2.0 g, and this mixture was spread 300 µm thick and dried to give an adhesive film. Onto this film was spread 100 µm thick a mixture of Na alginate 2, glycerin 0.5, and H2O to 100 g, and this was dried. To the surface of the alginate film was applied a 5% citric acid solution

(0.1 mL/cm<sup>2</sup>) to give a transdermal tape.

L12 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2004:413016 CAPLUS  
DOCUMENT NUMBER: 140:407914  
TITLE: Polysaccharide-based heat-sealable water-soluble film  
INVENTOR(S): Miyai, Shunji; Akiba, Masanori; Yoneyama, Masaru;  
Chaen, Hiroto; Miyake, Toshio  
PATENT ASSIGNEE(S): Kabushiki Kaisha Hayashibara Seibutsu Kagaku Kenkyujo,  
Japan  
SOURCE: PCT Int. Appl., 39 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004041926	A1	20040521	WO 2003-JP14200	20031107
W: JP, KR, US RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR				
PRIORITY APPLN. INFO.:			JP 2002-324414	A 20021107
AB Title film gives a heat-sealed part which can satisfactorily retain the heat-sealed state even in a dry atmospheric and can be used for food, cosmetic, medicine, or chemical-product package. The water-soluble film comprises $\geq 1$ water-soluble polysaccharides containing no sulfate group, $\geq 1$ water-soluble polysaccharides containing sulfate groups, and $\geq 1$ hydroxy compds. as a material for humidification and contains substantially no crosslinking agent. When heat-sealed, the film gives a heat-sealed part which undergoes substantially no separation under moisture equilibrium conditions with relative humidity $\leq 25\%$ . Thus, a composition comprising PI 20 pullulan 20, Genuvisco CSW 2 carrageenan 3, sorbitol 1, Ryoto Sugar Ester S 1670 0.01, glycerin 2, and water 72 parts was applied on a polyethylene terephthalate film, dried at $85^\circ$ for 10 min, and kept at $25^\circ$ and 55% RH for 16 h to give a water soluble film, which was heat-sealed at $130^\circ$ for 3 s for packaging instant coffee.				
REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT				

L12 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2001:78445 CAPLUS  
DOCUMENT NUMBER: 134:149224  
TITLE: Pullulan film compositions for wrapping or encapsulation of cosmetics, food and drugs  
INVENTOR(S): Scott, Robert; Cade, Dominique; He, Xiongwei  
PATENT ASSIGNEE(S): Warner-Lambert Company, USA  
SOURCE: PCT Int. Appl., 29 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001007507	A1	20010201	WO 2000-EP6843	20000718
W: CA, CN, ID, JP, KR, MX, US, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
EP 1072633	A1	20010131	EP 1999-401849	19990722
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				

EP 1157691	A1	20011128	EP 2000-401333	20000516
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
CA 2380068	AA	20010201	CA 2000-2380068	20000718
EP 1204699	A1	20020515	EP 2000-956197	20000718
EP 1204699	B1	20050608		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY				
JP 2003505565	T2	20030212	JP 2001-512784	20000718
AT 297433	E	20050615	AT 2000-956197	20000718
ES 2240148	T3	20051016	ES 2000-956197	20000718
US 6887307	B1	20050503	US 2002-31897	20020122
US 2005031853	A1	20050210	US 2004-941182	20040915
PRIORITY APPLN. INFO.:			EP 1999-401849	A 19990722
			EP 2000-401333	A 20000516
			WO 2000-EP6843	W 20000718
			US 2002-31897	A1 20020122

AB The invention concerns compns. based on pullulan and a setting system for the use in pharmaceutical, veterinary, food, cosmetic or other products like films for wrapping food, aspics or jellies, preferably for predosed formulations like soft or hard capsules. The composition contain a gelling agent, e.g., cation, hydrocolloid or polysaccharide, and preferably further contains a surfactant. By using aqueous solution of the inventive compns., the hard pullulan capsules are produced by a conventional dipping molding process under the same process condition range than conventional gelatine capsules.

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2006 ACS on STN  
 ACCESSION NUMBER: 1997:710951 CAPLUS  
 DOCUMENT NUMBER: 127:319835  
 TITLE: Alginic acid-based gas-permeable films  
 INVENTOR(S): Takechi, Hironori; Nonomura, Toshio  
 PATENT ASSIGNEE(S): Tokushima Prefecture, Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	---	-----	-----	-----
JP 09278926	A2	19971028	JP 1996-87753	19960410
PRIORITY APPLN. INFO.:			JP 1996-87753	19960410

AB The title films, useful for packaging fruits, preserved foods, etc. by applying on corrugated boards for recyclable carton boxes, are prepared by forming films of aqueous solution of alginic acid and water-soluble compds. [e.g., pullulan, starch, polysaccharides, sucrose, glucose, cyclodextrin, poly(vinyl alc.)], coagulating alginic acid with polyvalent salts (e.g., CaCl<sub>2</sub>, BaCl<sub>2</sub>, Al sulfate, Zn sulfate, Cu sulfate, Sr chloride), and removing the water-soluble compds. to adjust gas permeability.

L13 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2004:120708 CAPLUS  
DOCUMENT NUMBER: 140:169672  
TITLE: Process for making orally consumable biopolymeric films  
INVENTOR(S): Auffret, Anthony David; Benee, Lisa Suzanne  
PATENT ASSIGNEE(S): Pfizer Limited, UK; Pfizer Inc.  
SOURCE: PCT Int. Appl., 24 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004012720	A1	20040212	WO 2003-IB3244	20030716
WO 2004012720	C1	20040415		
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
CA 2493786	AA	20040212	CA 2003-2493786	20030716
AU 2003247083	A1	20040223	AU 2003-247083	20030716
EP 1534253	A1	20050601	EP 2003-766550	20030716
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK			
BR 2003012993	A	20050628	BR 2003-12993	20030716
JP 2006503003	T2	20060126	JP 2004-525675	20030716
US 2004131661	A1	20040708	US 2003-626811	20030723
PRIORITY APPLN. INFO.:			GB 2002-17382	A 20020726
			US 2002-403887P	P 20020816
			WO 2003-IB3244	W 20030716

AB The present invention is concerned with a process for making rapidly dissolving and dispersing dosage forms, particularly orally consumable films, made of a hydrated polymer comprising pullulan and sodium alginate having a viscosity suitable for casting, for the delivery of pharmaceutically active agents. For example, pullulan (20.0 g) and sodium alginate (1.0 g) were dissolved in water (100 mL) and the pH of the resulting gel was adjusted to 3.5 with hydrochloric acid. To 31.7 g of the gel was added ibuprofen (3.5 g) and a film was prepared by applying the gel to a glass plate, and the resulting film was dried at 80° for 30 min. When dry, the film provided an ibuprofen concentration of 36.6% weight/weight, i.e., about 32 mg of ibuprofen in a film 2.2 cm x 3.2 cm.

L13 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1993:493857 CAPLUS  
DOCUMENT NUMBER: 119:93857  
TITLE: Size exclusion chromatography with viscosity detection of complex polysaccharides: Component analysis  
AUTHOR(S): Hoagland, Peter D.; Fishman, Marshall L.; Konja, Gordana; Clauss, Ekkehard  
CORPORATE SOURCE: East. Res. Cent., Agric. Res. Serv., Philadelphia, PA, 19118, USA  
SOURCE: Journal of Agricultural and Food Chemistry (1993),

41(8), 1274-81

CODEN: JAFCAU; ISSN: 0021-8561

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Complex polysaccharides obtained from plants and microbes are finding increased application in the food industry as additives to improve the functional properties of processed foods. High-performance size exclusion chromatog. (HPSEC) with concentration-viscosity detection, coupled with

Gaussian

curve fitting of concentration and viscosity chromatograms, a method earlier developed to investigate the behavior of a variety of pectins in solution, has now been applied to tragacanthin, gum locust bean, (carboxymethyl)cellulose, sodium alginates, apple pectin, and gum arabic. Weight-average intrinsic viscosities (i.v.) were determined

directly from

areas under the concentration and specific viscosity curves. In addition,

global

and component radii of gyration (R<sub>gw</sub>) and mol. wts. (M<sub>Ww</sub>) were determined from both size and universal calibration of columns with pullulans.

Gaussian component i.v. and component R<sub>gw</sub> values of some polysaccharides, investigated in 0.05 M NaNO<sub>3</sub> at 35°, were found to be related by a characteristic power law exponent. HPSEC with concentration and viscosity detection has good potential for rapidly determining phys. properties crucial to control of quality of polysaccharides in the food industry.

L13 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1990:42641 CAPLUS

DOCUMENT NUMBER: 112:42641

TITLE: Apatite fiber filling materials for bone defects

INVENTOR(S): Mori, Shoichi; Egawa, Kazufumi; Yoshizawa, Masao

PATENT ASSIGNEE(S): Toa Nenryo Kogyo K. K., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
JP 01034372	A2	19890203	JP 1987-192033	19870731
PRIORITY APPLN. INFO.:			JP 1987-192033	19870731

AB The title fibers are prepared by coating or impregnating apatite fibers with biolog. compatible polymers [e.g., alginic acid (I)]. Thus, an aqueous composition containing 42% hydroxyapatite powder and 9% pullulan was spun, blown onto a drum, and fired 1 h at 1100° to give fibers with good toughness. The fibers were then impregnated with aqueous 1.0% I and dried to give fibers with apatite content 82.9-85.9%. New bone formation was rapid around fillers in cats with artificially formed bone defects.

L14 ANSWER 1 OF 5 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2004:428817 CAPLUS  
DOCUMENT NUMBER: 140:429013  
TITLE: Fast-disintegrating solid dosage forms being  
non-friable and comprising pullulan  
INVENTOR(S): Pruitt, John D.; Hovey, Douglas C.; Ryde, Tuula A.;  
Bosch, H. William; Lee, Robert W.  
PATENT ASSIGNEE(S): Elan Pharma International Ltd., Ire.  
SOURCE: PCT Int. Appl., 58 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004043440	A1	20040527	WO 2003-US35915	20031112
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
CA 2504610	AA	20040527	CA 2003-2504610	20031112
AU 2003297260	A1	20040603	AU 2003-297260	20031112
US 2004156895	A1	20040812	US 2003-705227	20031112
EP 1585502	A1	20051019	EP 2003-811260	20031112
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
JP 2006508136	T2	20060309	JP 2004-552054	20031112
PRIORITY APPLN. INFO.:			US 2002-425264P	P 20021112
			WO 2003-US35915	W 20031112

AB Disclosed are solid dosage forms of active agents and pullulan. The solid dosage form has a friability of less than about 1%. A rapidly dissolving solid dosage form of an active compound was prepared containing pullulan and PVP and mannitol.

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 2 OF 5 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2004:120708 CAPLUS  
DOCUMENT NUMBER: 140:169672  
TITLE: Process for making orally consumable biopolymeric films  
INVENTOR(S): Auffret, Anthony David; Benee, Lisa Suzanne  
PATENT ASSIGNEE(S): Pfizer Limited, UK; Pfizer Inc.  
SOURCE: PCT Int. Appl., 24 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004012720	A1	20040212	WO 2003-IB3244	20030716
WO 2004012720	C1	20040415		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

CA 2493786 AA 20040212 CA 2003-2493786 20030716  
AU 2003247083 A1 20040223 AU 2003-247083 20030716  
EP 1534253 A1 20050601 EP 2003-766550 20030716

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK

BR 2003012993 A 20050628 BR 2003-12993 20030716  
JP 2006503003 T2 20060126 JP 2004-525675 20030716  
US 2004131661 A1 20040708 US 2003-626811 20030723

PRIORITY APPLN. INFO.: GB 2002-17382 A 20020726  
US 2002-403887P P 20020816  
WO 2003-IB3244 W 20030716

AB The present invention is concerned with a process for making rapidly dissolving and dispersing dosage forms, particularly orally consumable films, made of a hydrated polymer comprising pullulan and sodium alginate having a viscosity suitable for casting, for the delivery of pharmaceutically active agents. For example, pullulan (20.0 g) and sodium alginate (1.0 g) were dissolved in water (100 mL) and the pH of the resulting gel was adjusted to 3.5 with hydrochloric acid. To 31.7 g of the gel was added ibuprofen (3.5 g) and a film was prepared by applying the gel to a glass plate, and the resulting film was dried at 80° for 30 min. When dry, the film provided an ibuprofen concentration of 36.6% weight/weight, i.e., about 32 mg of ibuprofen in a film 2.2 cm x 3.2 cm.

L14 ANSWER 3 OF 5 CAPLUS COPYRIGHT 2006 ACS on STN  
ACCESSION NUMBER: 2002:31226 CAPLUS  
DOCUMENT NUMBER: 136:90917  
TITLE: Rapidly disintegrating pharmaceutical dosage forms and method for preparation  
INVENTOR(S): von Falkenhausen, Christian; Krumme, Markus; Laux, Wolfgang  
PATENT ASSIGNEE(S): LTS Lohmann Therapie-Systeme A.-G., Germany  
SOURCE: PCT Int. Appl., 21 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: German  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002002085	A2	20020110	WO 2001-EP7051	20010622
WO 2002002085	A3	20020620		
W: AU, BR, CA, CN, CZ, HU, IL, IN, JP, KR, MX, NZ, PL, RU, US, ZA				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR				
DE 10032456	A1	20020131	DE 2000-10032456	20000704
CA 2414665	AA	20030106	CA 2001-2414665	20010622
CA 2506712	AA	20030106	CA 2001-2506712	20010622
EP 1296661	A2	20030402	EP 2001-945296	20010622
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY, TR				
BR 2001012495	A	20031202	BR 2001-12495	20010622



JP 2004501958	T2	20040122	JP 2002-506707	20010622
EP 1588701	A2	20051026	EP 2005-10436	20010622
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY, TR				
NZ 523426	A	20051223	NZ 2001-523426	20010622
CN 1720916	A	20060118	CN 2005-10089198	20010622
ZA 2003000316	A	20030522	ZA 2003-316	20030113
US 2004028732	A1	20040212	US 2003-332064	20030227
AU 2005202270	A1	20050616	AU 2005-202270	20050525
JP 2005255694	A2	20050922	JP 2005-168248	20050608
PRIORITY APPLN. INFO.:			DE 2000-10032456	A 20000704
			AU 2001-67552	A3 20010622
			CA 2001-2414665	A3 20010622
			CN 2001-812333	A3 20010622
			EP 2001-945296	A3 20010622
			JP 2002-506707	A3 20010622
			WO 2001-EP7051	W 20010622

AB The invention relates to flat administrable drug delivery forms (wafers) which decompose or dissolve rapidly in an aqueous medium, and rapidly release active ingredients in the oral cavity, in body openings and body cavities. The drug delivery systems comprise a matrix which contains at least one water-soluble polymer; in addition to at least one active ingredient; and is characterized in that the polymer matrix incorporates cavities or bubbles. The oral formulations exhibit improved mouth feel. Thus 111.43 g distilled water was mixed with 22.38 g Mowiol 8-88 at 80°C for 30 min; after cooling to 40°C 1.8 g PEG 400 and 1.8 g PEG 4000 were added, and the mixture was homogenized. Further components were added (g): aspartame 0.18; aroma 5.58; nicotine hydrogentartrate 26.46; silica 1.8. Mixing was continued below 50°C for 2 h and foam was beaten; the foam was spread and dried.

L14 ANSWER 4 OF 5 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2001:713109 CAPLUS  
DOCUMENT NUMBER: 135:262242  
TITLE: Fast dissolving orally consumable films containing an ion exchange resin as a taste masking agent  
INVENTOR(S): Bess, William S.; Kulkarni, Neema; Ambike, Suhas H.; Ramsay, Michael Paul  
PATENT ASSIGNEE(S): Warner-Lambert Company, USA  
SOURCE: PCT Int. Appl., 41 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001070194	A1	20010927	WO 2001-US2192	20010123
W: AE, AG, AL, AU, BA, BB, BG, BR, BZ, CA, CN, CR, CU, CZ, DM, DZ, EE, GD, GE, HR, HU, ID, IL, IN, IS, JP, KP, KR, LC, LK, LR, LT, LV, MA, MG, MK, MN, MX, MZ, NO, NZ, PL, RO, SG, SI, SK, SL, TR, TT, UA, UZ, VN, YU, ZA, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
US 7067116	B1	20060627	US 2000-535005	20000323
CA 2402988	AA	20010927	CA 2001-2402988	20010123
EP 1267829	A1	20030102	EP 2001-959912	20010123
EP 1267829	B1	20060503		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
BR 2001009378	A	20030603	BR 2001-9378	20010123
JP 2003527410	T2	20030916	JP 2001-568392	20010123

NZ 520961	A	20031031	NZ 2001-520961	20010123
RU 2256442	C2	20050720	RU 2002-128354	20010123
CN 1651092	A	20050810	CN 2004-10100395	20010123
AT 324864	E	20060615	AT 2001-959912	20010123
EP 1674078	A2	20060628	EP 2006-7766	20010123

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR

ZA 2002006963	A	20030721	ZA 2002-6963	20020829
NO 2002004513	A	20020920	NO 2002-4513	20020920
AU 2006201888	A1	20060525	AU 2006-201888	20060504
US 2006204559	A1	20060914	US 2006-429547	20060505

PRIORITY APPLN. INFO.:

US 2000-535005	A	20000323
EP 2001-959912	A3	20010123
WO 2001-US2192	W	20010123

AB Physiol. acceptable films, including edible films, are disclosed. The films include a water soluble film-forming polymer, such as pullulan, and a taste masked pharmaceutically active agent, such as dextromethorphan. The taste masking agent is preferably a sulfonated polymer ion exchange resin comprising polystyrene cross-linked with divinylbenzene, such as Amberlite. Methods for producing the films are also disclosed. For example, an antitussive film was prepared in accordance with the following procedure: (A) uncoated dextromethorphan hydrobromide was dissolved with mixing in the water, while maintaining the temperature at 75°, Amberlite resin was then mixed into the water with heating at 70-80°, and heating was stopped, water lost to evaporation was replaced, and the potassium sorbate and sweeteners were then added to the composition with mixing to form Preparation A. (B) The film-forming ingredients (i.e., xanthan gum, locust bean gum, carrageenan and pullulan) were mixed in a sep. container to form Preparation B. (C) Preparation B was slowly added to Preparation A with rapid mixing, followed by overnight mixing at a reduced rate to provide Preparation C. (D) The menthol was dissolved with mixing in the alc. in a sep. container. The Physcool was then dissolved with mixing therein. Monoammonium glycyrrhizinate, Polysorbate 80, Atmos 300 and flavors were then added to the mixture and mixed to enhanced uniformity to form Preparation D. (E) Preparation D, glycerin and mannitol were added to Preparation C with thorough mixing to provide Preparation E. Preparation E was poured on a mold and cast to form a film of a desired thickness at room temperature. The film was dried under warm air and cut to a desired dimension (dictated by, e.g., dosage and mouthfeel) for taste testing. The active film had a pleasing appearance and taste.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 5 OF 5 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2000:608557 CAPLUS  
DOCUMENT NUMBER: 133:198680  
TITLE: Rapidly-soluble compositions comprising open matrix of a carbohydrate polymer  
INVENTOR(S): Martyn, Glen Patrick; Colaco, Camilo  
PATENT ASSIGNEE(S): Quadrant Holdings Cambridge Limited, UK  
SOURCE: PCT Int. Appl., 16 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
WO 2000050013	A1	20000831	WO 2000-GB630	20000222
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU,				

CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL,  
 IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA,  
 MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI,  
 SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM,  
 AZ, BY, KG, KZ, MD, RU, TJ, TM  
 RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE,  
 DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF,  
 CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG  
 CA 2363126 AA 20000831 CA 2000-2363126 20000222  
 EP 1156785 A1 20011128 EP 2000-905188 20000222  
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
 IE, SI, LT, LV, FI, RO  
 JP 2002537322 T2 20021105 JP 2000-600625 20000222  
 PRIORITY APPLN. INFO.: GB 1999-4049 A 19990222  
 WO 2000-GB630 W 20000222  
 AB A composition in the form of a shaped body, comprises a rapidly soluble,  
 open matrix of a carbohydrate polymer. Such a composition may be obtained by  
 the removal of solvent from a solution containing the carbohydrate polymer and  
 any other component(s), the solution being provided as a single  
 dosage aliquot in a mold corresponding to the desired shape. A  
 solution containing pullulan 5, mannitol 5, and diltiazem 20% was  
 lyophilized for 4 h to yield a solid matrix. The solid matrix was of  
 sufficient non-friability and dissolved instantaneously in water at room  
 temperature  
 REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS  
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L15 ANSWER 1 OF 4 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2004:120708 CAPLUS  
DOCUMENT NUMBER: 140:169672  
TITLE: Process for making orally consumable biopolymeric films  
INVENTOR(S): Auffret, Anthony David; Benee, Lisa Suzanne  
PATENT ASSIGNEE(S): Pfizer Limited, UK; Pfizer Inc.  
SOURCE: PCT Int. Appl., 24 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004012720	A1	20040212	WO 2003-IB3244	20030716
WO 2004012720	C1	20040415		
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
CA 2493786	AA	20040212	CA 2003-2493786	20030716
AU 2003247083	A1	20040223	AU 2003-247083	20030716
EP 1534253	A1	20050601	EP 2003-766550	20030716
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK			
BR 2003012993	A	20050628	BR 2003-12993	20030716
JP 2006503003	T2	20060126	JP 2004-525675	20030716
US 2004131661	A1	20040708	US 2003-626811	20030723
PRIORITY APPLN. INFO.:			GB 2002-17382	A 20020726
			US 2002-403887P	P 20020816
			WO 2003-IB3244	W 20030716

AB The present invention is concerned with a process for making rapidly dissolving and dispersing dosage forms, particularly orally consumable films, made of a hydrated polymer comprising pullulan and sodium alginate having a viscosity suitable for casting, for the delivery of pharmaceutically active agents. For example, pullulan (20.0 g) and sodium alginate (1.0 g) were dissolved in water (100 mL) and the pH of the resulting gel was adjusted to 3.5 with hydrochloric acid. To 31.7 g of the gel was added ibuprofen (3.5 g) and a film was prepared by applying the gel to a glass plate, and the resulting film was dried at 80° for 30 min. When dry, the film provided an ibuprofen concentration of 36.6% weight/weight, i.e., about 32 mg of ibuprofen in a film 2.2 cm x 3.2 cm.

L15 ANSWER 2 OF 4 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2003:86678 CAPLUS  
DOCUMENT NUMBER: 138:339909  
TITLE: Molecular weight effects on solution rheology of pullulan and mechanical properties of its films  
AUTHOR(S): Lazaridou, Athina; Biliaderis, Costas G.; Kontogiorgos, Vassilis  
CORPORATE SOURCE: School of Agriculture, Laboratory of Food Chemistry and Biochemistry, Food Science and Technology Department, Aristotle University, Thessaloniki, 54006,

Greece  
SOURCE: Carbohydrate Polymers (2003), 52(2), 151-166  
CODEN: CAPOD8; ISSN: 0144-8617  
PUBLISHER: Elsevier Science Ltd.  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB The effects of mol. weight on solution rheol. of pullulan, and on thermomech. properties of sorbitol and(or) water-plasticized pullulan specimens, prepared by either hot pressing or casting of aqueous solns., were studied. Pullulan samples differing in mol. weight were characterized by  $^{13}\text{C}$  NMR spectroscopy and SEC combined with a multi-angle laser light scattering and a refractive index detector. For samples with weight average mol. weight ( $M_w$ ) ranging between 100 and 560 + 103, the values of limiting viscosity ( $[\eta]$ ), critical concentration ( $c^*$ ), and coil overlap parameter ( $c^*[\eta]$ ) were within the range 0.38-0.70 dL/g, 1.4-3.1 g/dL and 1.0-1.2 dL/g, resp. The thermomech. properties of 5 mol. weight grades of pullulan, either alone or with sorbitol (plasticized at a 10% d.b. level) were examined by dynamic mech. thermal anal. (DMTA). A large drop in storage modulus  $E'$  (apprx. 101.5-103 Pa) and a peak in  $\tan \delta$  in the DMTA traces accompanied the glass-rubber transition ( $T_g$ ) or the  $\alpha$ -relaxation ( $T_\alpha$ ) of pullulan; the magnitude of the drop in  $E'$  and the  $\tan \delta$  peak height increased with increasing water content. The plasticizing action of water and sorbitol was evident in the DMTA curves, and the  $T_g$  vs. moisture content data were fitted to the Gordon-Taylor empirical model. Within the range of mol. wts. tested, there was no effect of polymer mol. weight on  $T_g$ . A  $\beta$ -relaxation detected by DMTA was shifted to lower temperature with increasing moisture content and to higher temperature with addition of sorbitol. Apparent activation energies for  $\alpha$ -relaxation ( $E_{a\alpha}$ ) and  $\beta$ -relaxation ( $E_{a\beta}$ ) processes, estimated from multi-frequency measurements, were within 171-640 and 118-256 kJ/mol, resp.; the values for  $E_{a\alpha}$  and fragility' parameter decreased with increasing moisture content. Anal. of viscoelasticity data using the time-temperature superposition principle with the Williams-Landel-Ferry equation was successful over the range  $T_g$  to  $T_g + 40^\circ$ , provided that the coeffs.  $C_1$  and  $C_2$  are optimized and not allowed to assume their universal' values. Large deformation mech. tests demonstrated large decreases in tensile (Young's) modulus ( $E$ ) and strength ( $\sigma_{\max}$ ), and an increase in percentage elongation with increasing water content and(or) addition of sorbitol in pullulan films. Relationships between the tensile parameters ( $E$  and  $\sigma_{\max}$ ) and water content showed an increase in stiffness of the films from 3 to 7% moisture, and a strong softening effect at higher water contents. The tensile tests revealed some relationships between mech. properties under uniaxial load and the mol. characteristics of pullulan, e.g.  $E$ ,  $\sigma_{\max}$ , and elongation values increased with increasing mol. weight

REFERENCE COUNT: 89 THERE ARE 89 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L15 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2002:63208 CAPLUS

DOCUMENT NUMBER: 136:342461

TITLE: Thermophysical properties of chitosan, chitosan-starch and chitosan-pullulan films near the glass transition  
AUTHOR(S): Lazaridou, Athina; Biliaderis, Costas G.

CORPORATE SOURCE: School of Agriculture, Laboratory of Food Chemistry and Biochemistry, Department of Food Science and Technology, Aristotle University, Thessaloniki, 540 06, Greece

SOURCE: Carbohydrate Polymers (2002), 48(2), 179-190  
CODEN: CAPOD8; ISSN: 0144-8617

PUBLISHER: Elsevier Science Ireland Ltd.  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB The thermomech. properties of aqueous solution-casted films of chitosan (I), starch-I (SC) and pullulan-I (PC) blends were examined by dynamic mech. thermal anal. (DMTA) and large deformation tensile testing. Incorporation of sorbitol (10 and 30% d.b.) and(or) adsorption of moisture by the films resulted in substantial depression of the glass transition temperature (Tg) of the polysaccharide matrix because of plasticization. For the composite films, there was no clear evidence of sep. phase transitions of the individual polymeric constituents or a sep. polyol phase; a rather broad but single drop of elastic modulus, E', and a single peak tan  $\delta$  were observed. The relationship between the Tg and moisture for all films could be modeled with the empirical Gordon-Taylor equation. Apparent activation (Ea) energies for the  $\alpha$ -relaxation process, estimated from multi-frequency DMTA measurements, were within 225-544 kJ mol<sup>-1</sup>, depending on film composition; the Ea and 'fragility' parameters decreased with increasing moisture content. Anal. of viscoelasticity data using the time-temperature superposition (TTS) principle with the Williams-Landel-Ferry (WLF) equation was successful, provided that the coeffs. C1 and C2 are optimized and not allowed to assume their 'universal' values. Tensile testing of films adjusted at various levels of moisture indicated large drops in Young's modulus and tensile strength ( $\sigma_{max}$ ) with increasing level of polyol and moisture; the sensitivity of the films to plasticization was in the order of SC>PC>I. Modeling of the modulus data with the Fermi equation allowed comparison among samples for the fall in modulus around the glass transition zone as a function of moisture content under isothermal conditions. Relationships between  $\sigma_{max}$  and water content showed an increase in stiffness of the PC films from 7-11% moisture, and a strong softening effect at higher water contents. The observed range of  $\sigma_{max}$  values (20-80 MPa) for most films was comparable to many medium-strength com. films.

REFERENCE COUNT: 93 THERE ARE 93 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L15 ANSWER 4 OF 4 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1999:547289 CAPLUS

DOCUMENT NUMBER: 131:256483

TITLE: Glass transition and physical properties of polyol-plasticized pullulan-starch blends at low moisture

AUTHOR(S): Biliaderis, C. G.; Lazaridou, A.; Arvanitoyannis, I.

CORPORATE SOURCE: Laboratory of Food Chemistry and Biochemistry, Department of Food Science and Technology, School of Agriculture, Aristotle University, Thessaloniki, 540 06, Greece

SOURCE: Carbohydrate Polymers (1999), 40(1), 29-47

CODEN: CAPOD8; ISSN: 0144-8617

PUBLISHER: Elsevier Science Ireland Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The effects of water and polyols, at low weight fractions, on water sorption behavior, thermal and mech. properties, and gas permeability of blends of pullulan and gelatinized corn starch (ps), prepared by either hot pressing or casting aqueous solns., were studied. Incorporation of sorbitol or xylose in the ps blends resulted in lower equilibrium moisture contents in the low to medium aw range, and much higher moisture contents at aw > 0.75; the Guggenheim-Anderson-DeBoer isotherm model adequately described the sorption data up to the aw of 0.9. Water and polyols exerted a strong plasticizing action, lowering the Tg of the blends and allowing enthalpy relaxation events to occur during aging of the amorphous specimens. At the low polyol levels examined (10 and 20% dry basis), a single glass transition temperature for the polymeric constituents was

identified in all samples by DSC and DMTA; apparent activation energies of 226-296 kJ mol<sup>-1</sup> for the  $\alpha$ -relaxation were estimated from multifrequency mech. measurements. Large deformation mech. tests demonstrated sharp decreases in Young's moduli with increasing levels of polyol and water, typical of the glass-rubber transition of amorphous polymers; the relationship of flexural modulus and moisture content was quantified using the Fermi's model. The relationship between maximum stress ( $\sigma_{max}$ ) and water content showed an increase in stiffness of the blends from 7 to 11% moisture, and a strong softening effect when the water content exceeded this range. The Arrhenius plots of O<sub>2</sub> and CO<sub>2</sub> permeability data showed distinct changes in slope in the glass transition region of the blends. Anal. of viscoelastic data with the time-temperature superposition principle and treatment of gas permeability data with the Williams-Landel-Ferry equation suggested that application of this model is meaningful if the coeffs., C<sub>1</sub> and C<sub>2</sub>, are allowed to vary instead of assuming their "universal" values.

REFERENCE COUNT:           126   THERE ARE 126 CITED REFERENCES AVAILABLE FOR  
THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE  
FORMAT

L19 ANSWER 11 OF 22 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2000:733001 CAPLUS  
DOCUMENT NUMBER: 133:313376  
TITLE: Skin-protecting cosmetics containing polymer blends  
INVENTOR(S): Kawata, Yuzo; Yamazaki, Seiji; Takagi, Yutaka; Hori, Kimihiko  
PATENT ASSIGNEE(S): Kao Corp., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000290153	A2	20001017	JP 1999-103198	19990409
JP 3771743	B2	20060426		

PRIORITY APPLN. INFO.: JP 1999-103198 19990409

AB This present invention relates to cosmetics for forming skin-protecting films comprising polymer blends having a defined moisture permeation coefficient. The polymers are water-soluble or water-dispersible and form percolation structures. A lotion contained pullulan 0.5, polyethylene glycol 1, ethanol 5, glycerin 3, polyoxyethylene oleyl ether 0.3, ethoxylated hydrogenated castor oils 0.2, 2-hydroxyethylguanidine 0.5, ceramides 0.5, Zn p-phenolsulfonate 0.2, and water q.s. to 100 %.

L19 ANSWER 12 OF 22 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1995:526598 CAPLUS  
DOCUMENT NUMBER: 122:316401  
TITLE: Polyol esters with high dielectric constant and good moisture resistance  
INVENTOR(S): Fukui, Ikuo; Nagura, Shigehiro  
PATENT ASSIGNEE(S): Shinetsu Chemical Industry Co., Ltd., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 06196022	A2	19940715	JP 1992-356992	19921222

PRIORITY APPLN. INFO.: JP 1992-356992 19921222

AB The title esters useful for elec. and electronic parts such as electroluminescent device and capacitor (no data) are derived from monosaccharides, oligosaccharides, polysaccharides, poly(vinyl alc.), or their derivs. and bear  $\geq 60\%$  cyanoethyl groups and 5-40% C10-20 saturated fatty acid ester groups. Thus, acylating a cyanoethylated pullulan (Cyanoresin CR-S) with lauroyl chloride gave a title ester with D.S. 0.32, a solvent-cast film from which showed good moisture resistance.

L19 ANSWER 13 OF 22 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1991:608823 CAPLUS  
DOCUMENT NUMBER: 115:208823  
TITLE: Photo- and heat-polymerizable cyanoethyl compounds  
INVENTOR(S): Tanioka, Soji; Onda, Yoshiro; Maruyama, Kazumasa; Chiba, Toru  
PATENT ASSIGNEE(S): Shin-Etsu Chemical Industry Co., Ltd., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.



CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 02298502	A2	19901210	JP 1989-119094	19890512
PRIORITY APPLN. INFO.:			JP 1989-119094	19890512

AB Title compns. useful as dielec. materials contain cyanoethyl and OH groups, in which H of the latter is displaced by the N-methyleneacrylamide group. Thus, cyanoethyl pullulan 150, hydroquinone Me ether 1, 85% H<sub>3</sub>PO<sub>4</sub> 0.5, N-methylolacrylamide 100 g in Me<sub>2</sub>CO were heated at 50° for 1 h to obtain a compound with degree of substitution for cyanoethyl and N-methylolacrylamide groups being 2.72 and 0.15, resp. The obtained compound (20 g) was mixed with 0.6 g benzil in Me<sub>2</sub>CO, and the mixture was cast on a glass plate, dried, and UV-irradiated to obtain a film showing Me<sub>2</sub>CO-insol. content 91% and softening temperature >270°, vs. 0 and 130, resp., for the film prepared using untreated cyanoethyl pullulan.

L19 ANSWER 14 OF 22 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1988:453546 CAPLUS  
DOCUMENT NUMBER: 109:53546  
TITLE: Seasoning-containing carbohydrate films readily soluble in water  
INVENTOR(S): Fukui, Katsutada; Kobayashi, Hiromi  
PATENT ASSIGNEE(S): Daicel Chemical Industries, Ltd., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 3 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 63036767	A2	19880217	JP 1986-180050	19860801
JP 07121200	B4	19951225		
PRIORITY APPLN. INFO.:			JP 1986-180050	19860801

AB Edible films containing seasonings, flavoring materials, etc. are prepared using mixts. of microfibrillated water-insol. natural fibers and polyhydroxy compds. as binders. Thus, an aqueous solution of pullulan (mol. weight 200,000) was homogenized with pulverized filter paper to give a suspension of microfibrillated cellulose, which was mixed with an aqueous slurry containing dried cod roe, dried laver powders, NaCl, and Na glutamate. The mixture was cast on a polyester film and dried to give an edible film. This dried film was readily soluble in H<sub>2</sub>O and used as a seasoning.

L19 ANSWER 15 OF 22 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1987:86556 CAPLUS  
DOCUMENT NUMBER: 106:86556  
TITLE: Electrically conductive pullulan resin compositions  
INVENTOR(S): Miyata, Seizo; Yugawa, Masahiko; Tasaka, Shigeru  
PATENT ASSIGNEE(S): Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 61246238	A2	19861101	JP 1985-86587	19850424
PRIORITY APPLN. INFO.:			JP 1985-86587	19850424

AB Cyanoethyl pullulan 8.4, N,N'-diphenyl-p-phenylenediamine 0.04, and iodine 0.96 g were dissolved in MeCN, cast on a polyethylene film, and dried at 35-40° for 3 days in vacuo to give an elec. conductor whose conductivity did not change for >200 days.

L19 ANSWER 16 OF 22 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1984:594061 CAPLUS  
DOCUMENT NUMBER: 101:194061  
TITLE: Self-supporting glucan films  
INVENTOR(S): Hijiya, Hiromi; Miyake, Toshio  
PATENT ASSIGNEE(S): Hayashibara Biochemical Laboratories, Inc., Japan  
SOURCE: Fr. Demande, 14 pp.  
CODEN: FRXXBL  
DOCUMENT TYPE: Patent  
LANGUAGE: French  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2537496	A1	19840615	FR 1983-19729	19831209
FR 2537496	B1	19881014		
US 4562020	A	19851231	US 1983-556957	19831201
PRIORITY APPLN. INFO.:			JP 1982-217196	A 19821211
			JP 1983-149993	A 19830817

AB Title films with high tensile and bending strength for water-soluble, edible packaging materials for food, pharmaceuticals, and perfumes and manufactured by casting an aqueous glucan [9012-72-0] solution on a continuous moving corona-treated plastic band, drying, and separating from the band. Thus, water containing corn syrup (dextrose equivalent 43) 10 (based on solids), K<sub>2</sub>HPO<sub>4</sub> 0.6, NaCl 0.1, MgSO<sub>4</sub>·7H<sub>2</sub>O 0.02, (NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub> 0.06, and yeast extract 0.04% was heated 20 min at 120°, inoculated with Aureobasidium pullulans IFO 6353 at 25°, stirred and aerated one week, decolorized, partially purified by reverse osmosis, and concentrated to give 70% pullulan [9057-02-7] as a 35% solution This solution was cast on a continuous, moving, corona-treated polyester band, dried at 90°, and separated from the band to give a 0.04-mm-thick transparent film useful as water-soluble, edible packaging material.

L19 ANSWER 17 OF 22 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1982:55407 CAPLUS  
DOCUMENT NUMBER: 96:55407  
TITLE: Dry-cell batteries  
PATENT ASSIGNEE(S): Hitachi, Ltd., Japan  
SOURCE: Jpn. Tokkyo Koho, 2 pp.  
CODEN: JAXXAD  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 56040944	B4	19810924	JP 1974-42592	19740415
PRIORITY APPLN. INFO.:			JP 1974-42592	A 19740415

AB A starch-water-soluble polymer adhesive mixture is coated on a pullulan film to prepare a dry-cell battery separator, and the coated side is in contact with the Zn can. Thus, pullulan acetate

[53571-84-9] was cast to a 70 $\mu$ -thick film, and a mixture of cornstarch and Me cellulose was coated on 1 side of the film to prepare a separator. Dry-cell batteries using the separator and a kraft paper-based separator were stored for 3 mo, and the discharge across a 2- $\Omega$  load was 425 min vs. 365 min for conventional batteries.

L19 ANSWER 18 OF 22 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1977:441049 CAPLUS  
DOCUMENT NUMBER: 87:41049  
TITLE: Water-resistant pullulan  
INVENTOR(S): Tsuji, Kozo; Fujita, Fumio; Fujimoto, Masanori; Masuko, Fujio; Fukami, Kosuko  
PATENT ASSIGNEE(S): Sumitomo Chemical Co., Ltd., Japan; Hayashibara Biochemical Laboratories, Inc.  
SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 51117786	A2	19761016	JP 1975-43788	19750409
PRIORITY APPLN. INFO.:			JP 1975-43788	A 19750409

AB Water-resistant pullulan (I) [9057-02-7] having good mech. strength was prepared by crosslinking I with 2-hydroxyadipaldehyde [141-31-1] or glutaraldehyde (II) [111-30-8]. Thus, a solution of 8.1 g I, 20 ml aqueous 25% II, and 25 ml water was mixed with 0.5 g MgCl<sub>2</sub>·6H<sub>2</sub>O, cast on glass, and dried to prepare a film which did not deform after immersing in water for 1 day.

L19 ANSWER 19 OF 22 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1977:92223 CAPLUS  
DOCUMENT NUMBER: 86:92223  
TITLE: Water-resistant pullulan  
INVENTOR(S): Tsuji, Kozo; Fujimoto, Masanori; Masuko, Fujio; Nagase, Tsuneyuki  
PATENT ASSIGNEE(S): Hayashibara Biochemical Laboratories, Inc., Japan; Sumitomo Chemical Co., Ltd.  
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 3  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 51151783	A2	19761227	JP 1975-76266	19750620
US 4152170	A	19790501	US 1976-695762	19760614
DE 2627125	A1	19761230	DE 1976-2627125	19760616
DE 2627125	C2	19851212		
GB 1535603	A	19781213	GB 1976-24967	19760616
FR 2339624	A1	19770826	FR 1976-18373	19760617
FR 2339624	B1	19790427		
PRIORITY APPLN. INFO.:			JP 1975-74811	A 19750618
			JP 1975-75247	A 19750619
			JP 1975-75248	A 19750619
			JP 1975-76266	A 19750620
			JP 1975-76267	A 19750620

AB Pullulan [9057-02-7] was crosslinked with adipic acid (I) [124-04-9], oxalic acid [144-62-7], or glutaric acid [110-94-1] to improve

water resistance. Thus, 10 parts pullulan was dissolved in 100 parts DMF, mixed with 5 parts I and p-toluenesulfonic acid, heated at 70-100° for 10 h, cast on glass to form a film, and heated at 130° for 5 h to give a water-resistant film

L19 ANSWER 20 OF 22 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1977:73416 CAPLUS  
DOCUMENT NUMBER: 86:73416  
TITLE: Carboxylated pullulan  
INVENTOR(S): Tsuji, Kozo; Fujimoto, Masanori; Masuko, Fujio; Nagase, Tsuneyuki  
PATENT ASSIGNEE(S): Sumitomo Chemical Co., Ltd., Japan  
SOURCE: Ger. Offen., 13 pp.  
CODEN: GWXXBX  
DOCUMENT TYPE: Patent  
LANGUAGE: German  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2623212	A1	19761230	DE 1976-2623212	19760524
JP 51149388	A2	19761222	JP 1975-74091	19750617
FR 2314923	A1	19770114	FR 1976-15733	19760525
FR 2314923	B1	19781103		
GB 1536774	A	19781220	GB 1976-21955	19760527
			JP 1975-74091	A 19750617

PRIORITY APPLN. INFO.:

AB The surface tension of pullulan (I) [9057-02-7] is lowered without reduction of strength by carboxylation. Thus, 10 parts I of mol. weight

295,000 was dissolved in 300 parts 90% H3PO4, mixed with 2 parts NaNO2 at 10°, and stirred 1 h, giving 8 parts carboxylated I with carboxy content 10%. This product was cast into a 30 μ film which had tensile strength 600 kg/cm2, Young's modulus 19,000 kg/cm2, good clarity, and good cold water solubility. Oxidized starch formed a brittle, non-continuous film under the same conditions. The carboxylated

I had surface tension 51 d/cm as a 1% aqueous solution, compared with 68 dyne/cm

for the unoxidized starting material.

L19 ANSWER 21 OF 22 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1976:169514 CAPLUS  
DOCUMENT NUMBER: 84:169514  
TITLE: Pullulan acetate semipermeable membranes  
INVENTOR(S): Sano, Takezo; Shimomura, Takatoshi; Hayashibara, Ken  
PATENT ASSIGNEE(S): Sumitomo Chemical Co., Ltd., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 3 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 50080278	A2	19750630	JP 1973-130560	19731119
JP 56012162	B4	19810319		

PRIORITY APPLN. INFO.:

AB Pullulan (I) is acetylated to 1.6-2.95 substitutions/repeating unit to give a material for semipermeable membranes. Thus, a mixture of I (mol. weight 4 + 105) 5, Ac2O 13, and pyridine 30 g was heated 2 hr at 100° to give acetylated I having 2.6 Ac groups/repeating unit. A 5-μ film, cast from a 5% solution of the above product

in CHCl<sub>3</sub>, desalinated 0.5% aqueous NaCl at 50 kg/cm<sup>2</sup> at a rate of 0.005 ml/min-cm<sup>2</sup> with a salt rejection rate of 88%.

L19 ANSWER 22 OF 22 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1975:517321 CAPLUS  
DOCUMENT NUMBER: 83:117321  
TITLE: Paint containing pullulan  
INVENTOR(S): Nakashio, Seizo; Sekine, Noriyuki; Toyota, Nobuhiro;  
Fujita, Fumio  
PATENT ASSIGNEE(S): Sumitomo Chemical Co., Ltd., Japan; Hayashibara  
Biochemical Laboratories, Inc.  
SOURCE: U.S., 4 pp.  
CODEN: USXXAM  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
US 3888809	A	19750610	US 1974-508844	19740924
PRIORITY APPLN. INFO.:			JP 1973-10994	A 19730929

GI For diagram(s), see printed CA Issue.

AB Pullulan (I) [9057-02-7] (n = 20-10,000) gave coating films having good clarity, stability to aging, and low O permeability. Thus, a 3% aqueous I solution (mol. weight 150,000) was applied to a glass plate and held 24 hr at 23° at 77% relative humidity to give a film having tensile strength 400 kg/cm<sup>2</sup>, Young's modulus 14,100 kg/cm<sup>2</sup>, and pencil hardness 2B, compared to 350 kg/cm<sup>2</sup>, 1,700 kg/cm<sup>2</sup> and 6B, resp. for a film cast from poly(vinyl alc.) solution

L19 ANSWER 1 OF 22 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2006:939959 CAPLUS  
DOCUMENT NUMBER: 145:316127  
TITLE: Edible food packaging film and its preparation method  
INVENTOR(S): Lin, Yuhui; Yu, Shaohua  
PATENT ASSIGNEE(S): Peop. Rep. China  
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 10pp.  
CODEN: CNXXEV  
DOCUMENT TYPE: Patent  
LANGUAGE: Chinese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
CN 1827672	A	20060906	CN 2006-10033533	20060213
PRIORITY APPLN. INFO.:			CN 2006-10033533	20060213

AB Title film is composed of pullulan 20-50, gelatin 20-50, auxiliary film-forming agent 1-17, emulsifier 0.05-2, pigment 0-1 and water 0.1-10wt%. The method comprises the following steps of mixing pullulan, gelatin and auxiliary film-forming agent with water at a weight ratio of 1: 50-80; heating to 90-100°, dissolving; mixing emulsifier with pigment, adding in above mixture, stirring; feeding into colloid mill, homogenizing, degassing; casting and film forming at 80-100°; and printing with edible ink. Title product has good mech. performance, choke property, fragrance protectiveness, water-tightness, oil-tightness, no pollution, degradable waste, etc. and can be adapted for automatic operation of food packaging. The invention has the advantages such as simple technol., low production cost, no release of harmful material, high safety, etc.

L19 ANSWER 2 OF 22 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2006:142658 CAPLUS  
DOCUMENT NUMBER: 144:288956  
TITLE: Pullulan film and microbial preservation method using the same  
INVENTOR(S): Li, Shijie  
PATENT ASSIGNEE(S): Peop. Rep. China  
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 8 pp.  
CODEN: CNXXEV  
DOCUMENT TYPE: Patent  
LANGUAGE: Chinese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
CN 1644675	A	20050727	CN 2004-10061418	20041223
PRIORITY APPLN. INFO.:			CN 2004-10061418	20041223

AB This invention provides a pullulan film and microbial preservation method using the same, wherein the film is prepared by flow casting and has a thickness of 0.02-0.04 mm, tensile strength of 27-32 MPa, angle tear strength of 31-38 KN/m, transmittancy of 95-98%, and oxygen permeation rate of 2.7-1.6 cm<sup>3</sup>/m<sup>2</sup>.bar.d. The method comprises spreading glycerol, trehalose protectant, and microbial inoculum onto the central part of two layers of sterilized pullulan films, sticking tightly, and enclosing with plastic film. The method can provide the conditions required for microbial preservation, such as dryness, oxygen deficiency, low temperature, nutrition deficiency, and addition of protectant. The films carried with microbial strains can be arranged into booklets for the research of microbial sorting, with the advantages of small size, simple operation, no

need of expensive equipment, and convenience for mailing and application. A culture of a microorganism can be prepared simply by cutting a small portion from the film on which the microorganism is preserved and dissolving it in a culture medium.

L19 ANSWER 3 OF 22 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2006:136018 CAPLUS  
DOCUMENT NUMBER: 144:253133  
TITLE: Film coating composition for food packaging  
INVENTOR(S): Lin, Yuhui; Liu, Mouquan; Yu, Shaohua  
PATENT ASSIGNEE(S): Shantou Fuwei Fruits and Nuts Manufacturing Co., Ltd.,  
Peop. Rep. China  
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 10 pp.  
CODEN: CNXXEV  
DOCUMENT TYPE: Patent  
LANGUAGE: Chinese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1593255	A	20050316	CN 2004-10027896	20040628
PRIORITY APPLN. INFO.:			CN 2004-10027896	20040628

AB The film coating composition is composed of (by weight) acrylic acid resin 20-70%, pullulan 20-70%, tween-80 0.5-10%, polyethylene glycol 0.1-5%, castor oil 0.5-10%, titanium dioxide 0.1-5%, and water 3-5%. The film coating composition contains also flavouring agent and pigment. The coating process on the surface of food comprises coating in turn with alc. solution of acrylic acid resin and aqueous solution of other materials to form waterproofing, anti-oxidative, and fresh-keeping film.

L19 ANSWER 4 OF 22 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2005:186970 CAPLUS  
TITLE: Films made with pectin: A versatile delivery system  
AUTHOR(S): Clark, Ross  
CORPORATE SOURCE: CP Kelco, San Diego, CA, 92123, USA  
SOURCE: Abstracts of Papers, 229th ACS National Meeting, San Diego, CA, United States, March 13-17, 2005 (2005), CELL-145. American Chemical Society: Washington, D. C.  
CODEN: 69GQMP  
DOCUMENT TYPE: Conference; Meeting Abstract  
LANGUAGE: English

AB Film formation with water soluble polymers is not new but the application of this long underutilized property is growing rapidly. Initial ideas of using the films as a form of "edible packaging" are giving way to a more realistic idea that these films are excellent carriers of active materials. The revolution began with the introduction of the Listerine "Pocket Paks" product using the often overlooked gum, pullulan. Pullulan has the advantage of being a low mol. weight material that can be used to cast films at high concns. and dissolve quickly in the mouth with a low degree of residue remaining. Our work with pectin shows that it can also be used effectively in this manner, usually with some modification of the pectin to lower its mol. weight and preserve the high methoxyl content inherent in pectin. These changes keep it from being excessively calcium sensitive and allow it to dissolve quickly. Several methods can be used to make this change. Applications of pectin films range from the breath strips already mentioned to delivery of drugs, cosmetics and possibly even a new type of confectionary product.

L19 ANSWER 5 OF 22 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2004:203635 CAPLUS  
 DOCUMENT NUMBER: 140:259084  
 TITLE: Fast dissolving film delivery of nucleotides that inhibit the unpleasant taste of bitter tasting medications  
 INVENTOR(S): McGregor, Richard Alexander; Homan, Harvey Donald; Gravina, Stephen Anthony  
 PATENT ASSIGNEE(S): Linguagen Corp., USA  
 SOURCE: PCT Int. Appl., 36 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004019885	A2	20040311	WO 2003-US27111	20030828
WO 2004019885	A3	20040910		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG AU 2003268262 A1 20040319 AU 2003-268262 20030828 PRIORITY APPLN. INFO.: US 2002-406716P P 20020829 WO 2003-US27111 W 20030828				

AB Physiol. acceptable films, including edible films, are disclosed. The films include a water soluble film-forming polymer, such as pullulan, guar gum, xanthan gum, locust bean gum, cellulose derivs., polyvinylpyrrolidone, etc. Edible films are disclosed that include pullulan and an effective amount of one or more nucleotide compound which contains a purine or pyrimidine group or derivative thereof which inhibit activation of bitter taste G protein sensory perception of bitter tasting medicaments, e.g., dextromethorphan, phenylephrine, chlorpheniramine maleate, loperamide, or nicotine. For example, a composition containing (by weight) AMP 14.2960%, xanthan gum 0.1070%, locust bean gum 0.2150%, carrageenan 1.0730%, pullulan 51.5780%, mint flavor 5.3640%, copper gluconate 1.1150%, water 22.32%, sodium saccharin granulate 2.6910%, Polysorbate 80 0.5580%, Atmos 300 0.5580%, and FD&C Green #3 0.0084% was mixed, cast and dried into a film.

L19 ANSWER 6 OF 22 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2003:666614 CAPLUS  
 DOCUMENT NUMBER: 140:43254  
 TITLE: Local thermal properties of multilayered polymer thin film  
 AUTHOR(S): Sakai, Wataru; Tatsumi, Yoshiji; Ueyasu, Asami; Tsutsumi, Naoto; Chiang, C. K.  
 CORPORATE SOURCE: Department of Polymer Science & Engineering, Kyoto Institute of Technology, Kyoto, Japan  
 SOURCE: PMSE Preprints (2003), 89, 198  
 CODEN: PPMRA9; ISSN: 1550-6703  
 PUBLISHER: American Chemical Society  
 DOCUMENT TYPE: Journal; (computer optical disk)  
 LANGUAGE: English  
 AB We measured local thermal properties, such as glass transition temperature (Tg),



of multilayered polymer thin films using local thermal anal. method. Sample preparation was carried out by casting method. The sample film consists of cyanoethyl ether Pullulan (CR-S) on glass substrate and polystyrene (PS, n = 1000 approx. 1400) with various thicknesses from micron to nano-order. Thermal properties was measured by microTA with a micron-size thermal probe which position can be controlled by AFM mechanism. The Tg of PS increased with decreasing the film thickness. This result was considered that the interaction between two polymer layers, which increases Tg of PS, was getting more observable with decreasing the PS thickness.

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L19 ANSWER 7 OF 22 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2003:282321 CAPLUS

DOCUMENT NUMBER: 138:308950

TITLE: Cosmetic film forming compositions containing pullulan and polyvinyl alcohol

INVENTOR(S): Zolotarsky, Yelena; O'Halloran, David

PATENT ASSIGNEE(S): Lavipharm Laboratories Inc., USA

SOURCE: PCT Int. Appl., 16 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003028635	A2	20030410	WO 2002-US30547	20020926
WO 2003028635	A3	20030703		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

US 2003086954	A1	20030508	US 2002-256264	20020926
---------------	----	----------	----------------	----------

PRIORITY APPLN. INFO.: US 2001-325490P P 20010927

AB Compsns. for forming a peelable, cosmetic film on the skin of a subject are provided. The compsns. provided contain 3-30% pullulan and 3-30% by weight polyvinyl alc., wherein the combination of pullulan and polyvinyl alc. constitutes 6-33% by weight of the composition A composition for forming a peelable, cosmetic film contained pullulan 6, polyvinyl alc. 10, glycerin 2, phenoxyethanol and methylparaben, isopropylparaben and isobutylparaben and butylparaben 0.7, and water qs to 100%.

L19 ANSWER 8 OF 22 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2003:261616 CAPLUS

DOCUMENT NUMBER: 138:292415

TITLE: Pullulan based film forming cosmetic compositions

INVENTOR(S): Zolotarsky, Yelena; O'Halloran, David

PATENT ASSIGNEE(S): Lavipharm Laboratories Inc., USA

SOURCE: PCT Int. Appl., 17 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003026583	A2	20030403	WO 2002-US30685	20020926
WO 2003026583	A3	20031016		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

US 2003082221	A1	20030501	US 2002-256234	20020926
---------------	----	----------	----------------	----------

PRIORITY APPLN. INFO.:	US 2001-325221P	P 20010927
------------------------	-----------------	------------

AB Comps. for forming a visible and distinctive cosmetic film on the skin of a subject contain 3 to 15 weight% pullulan. The invention also relates to a method of forming a visible and distinctive cosmetic film on the skin of a subject including applying a composition to the skin of the subject, wherein the composition contains 3 to 15 weight% pullulan.

L19 ANSWER 9 OF 22 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2001:724399 CAPLUS

DOCUMENT NUMBER: 136:6602

TITLE: Morphology and mechanical properties of pullulan/poly(vinyl alcohol) blends crosslinked with glyoxal

AUTHOR(S): Teramoto, Naozumi; Saitoh, Masahiko; Kuroiwa, Johta; Shibata, Mitsuhiro; Yosomiya, Ryutoku

CORPORATE SOURCE: Department of Industrial Chemistry, Chiba Institute of Technology, Chiba, 275-0016, Japan

SOURCE: Journal of Applied Polymer Science (2001), 82(9), 2273-2280

CODEN: JAPNAB; ISSN: 0021-8995

PUBLISHER: John Wiley & Sons, Inc.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Pullulan/poly(vinyl alc.) (PVA) blend films were prepared by casting the polymer solution in DMSO. Their morphol. and mech. properties were investigated. Scanning electron micrographs revealed that the pullulan was immiscible with PVA over the entire composition range. The tensile strength and modulus of the blend films were lower than those predicted by the upper bound composite equation. To improve the mech. properties, the reaction 40/60 blend was reacted with glyoxal. The IR spectral change and the increase in the glass-transition temperature (corresponding to the PVA component) accompanying the reaction indicated that crosslinking with glyoxal had proceeded. The crosslinked films were homogeneous and had higher tensile strengths and moduli than the simple blend.

REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L19 ANSWER 10 OF 22 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2001:713109 CAPLUS

DOCUMENT NUMBER: 135:262242

TITLE: Fast dissolving orally consumable films containing an ion exchange resin as a taste masking agent

INVENTOR(S): Bess, William S.; Kulkarni, Neema; Ambike, Suhas H.; Ramsay, Michael Paul

PATENT ASSIGNEE(S): Warner-Lambert Company, USA

SOURCE: PCT Int. Appl., 41 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001070194	A1	20010927	WO 2001-US2192	20010123
W: AE, AG, AL, AU, BA, BB, BG, BR, BZ, CA, CN, CR, CU, CZ, DM, DZ, EE, GD, GE, HR, HU, ID, IL, IN, IS, JP, KP, KR, LC, LK, LR, LT, LV, MA, MG, MK, MN, MX, MZ, NO, NZ, PL, RO, SG, SI, SK, SL, TR, TT, UA, UZ, VN, YU, ZA, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
US 7067116	B1	20060627	US 2000-535005	20000323
CA 2402988	AA	20010927	CA 2001-2402988	20010123
EP 1267829	A1	20030102	EP 2001-959912	20010123
EP 1267829	B1	20060503		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
BR 2001009378	A	20030603	BR 2001-9378	20010123
JP 2003527410	T2	20030916	JP 2001-568392	20010123
NZ 520961	A	20031031	NZ 2001-520961	20010123
RU 2256442	C2	20050720	RU 2002-128354	20010123
CN 1651092	A	20050810	CN 2004-10100395	20010123
AT 324864	E	20060615	AT 2001-959912	20010123
EP 1674078	A2	20060628	EP 2006-7766	20010123
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
ZA 2002006963	A	20030721	ZA 2002-6963	20020829
NO 2002004513	A	20020920	NO 2002-4513	20020920
AU 2006201888	A1	20060525	AU 2006-201888	20060504
US 2006204559	A1	20060914	US 2006-429547	20060505
PRIORITY APPLN. INFO.:			US 2000-535005	A 20000323
			EP 2001-959912	A3 20010123
			WO 2001-US2192	W 20010123

AB Physiol. acceptable films, including edible films, are disclosed. The films include a water soluble film-forming polymer, such as pullulan, and a taste masked pharmaceutically active agent, such as dextromethorphan. The taste masking agent is preferably a sulfonated polymer ion exchange resin comprising polystyrene cross-linked with divinylbenzene, such as Amberlite. Methods for producing the films are also disclosed. For example, an antitussive film was prepared in accordance with the following procedure: (A) uncoated dextromethorphan hydrobromide was dissolved with mixing in the water, while maintaining the temperature at 75°, Amberlite resin was then mixed into the water with heating at 70-80°, and heating was stopped, water lost to evaporation was replaced, and the potassium sorbate and sweeteners were then added to the composition with mixing to form Preparation A. (B) The film-forming ingredients (i.e., xanthan gum, locust bean gum, carrageenan and pullulan) were mixed in a sep. container to form Preparation B. (C) Preparation B was slowly added to Preparation A with rapid mixing, followed by overnight mixing at a reduced rate to provide Preparation C. (D) The menthol was dissolved with mixing in the alc. in a sep. container. The Physcool was then dissolved with mixing therein. Monoammonium glycyrrhizinate, Polysorbate 80, Atmos 300 and flavors were then added to the mixture and mixed to enhanced uniformity to form Preparation D. (E) Preparation D, glycerin and mannitol were added to Preparation C with thorough mixing to provide Preparation E. Preparation E was poured on a mold and cast to form a film of a desired

thickness at room temperature The film was dried under warm air and cut to a desired dimension (dictated by, e.g., dosage and mouthfeel) for taste testing. The active film had a pleasing appearance and taste.

REFERENCE COUNT:

3

THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2006:463142 CAPLUS  
DOCUMENT NUMBER: 144:440146  
TITLE: Semisolid buccal gums for the improvement of conditions  
INVENTOR(S): Yasuda, Naomi  
PATENT ASSIGNEE(S): Sunstar, Inc., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2006124362	A2	20060518	JP 2004-343048	20041027
PRIORITY APPLN. INFO.:			JP 2004-343048	20041027

AB Semisolids with breaking strength  $\leq 1 + 106$  dyne/cm<sup>2</sup>, comprise gums selected from the group consisting of agar, carrageenan, furcellaran, alginate, gellan gum, pectin, glucomannan, guar gum, locust bean gum, tamarind, celluloses, xanthan gum, pullulan, guar gum, CM-cellulose salts, starch phosphate, polyacrylic acid salts, arabic gum, curdlan, ghatti gum, and Aeromonas gum. The semisolids are applied onto the soft tissue, such as mucosa, tongue, gum, etc. in the buccal cavity to enhance the blood circulation, thereby improving inflammation, swelling, redness, etc. and to promote saliva secretion (no data given). For example, a gel was formulated containing carrageenan 0.15, xanthan gum 0.1, locust bean gum 0.08, concentrated glycerin 10, saccharin 0.01, ethoxylated hydrogenated castor oil 1, Ca lactate 0.09, flavors q.s., and distilled water balance to 100 %.

L20 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2004:120708 CAPLUS  
DOCUMENT NUMBER: 140:169672  
TITLE: Process for making orally consumable biopolymeric films  
INVENTOR(S): Auffret, Anthony David; Benee, Lisa Suzanne  
PATENT ASSIGNEE(S): Pfizer Limited, UK; Pfizer Inc.  
SOURCE: PCT Int. Appl., 24 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004012720	A1	20040212	WO 2003-IB3244	20030716
WO 2004012720	C1	20040415		
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
CA 2493786	AA	20040212	CA 2003-2493786	20030716
AU 2003247083	A1	20040223	AU 2003-247083	20030716

EP 1534253 A1 20050601 EP 2003-766550 20030716  
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK  
BR 2003012993 A 20050628 BR 2003-12993 20030716  
JP 2006503003 T2 20060126 JP 2004-525675 20030716  
US 2004131661 A1 20040708 US 2003-626811 20030723  
PRIORITY APPLN. INFO.: GB 2002-17382 A 20020726  
US 2002-403887P P 20020816  
WO 2003-IB3244 W 20030716

AB The present invention is concerned with a process for making rapidly dissolving and dispersing dosage forms, particularly orally consumable films, made of a hydrated polymer comprising pullulan and sodium alginate having a viscosity suitable for casting, for the delivery of pharmaceutically active agents. For example, pullulan (20.0 g) and sodium alginate (1.0 g) were dissolved in water (100 mL) and the pH of the resulting gel was adjusted to 3.5 with hydrochloric acid. To 31.7 g of the gel was added ibuprofen (3.5 g) and a film was prepared by applying the gel to a glass plate, and the resulting film was dried at 80° for 30 min. When dry, the film provided an ibuprofen concentration of 36.6% weight/weight, i.e., about 32 mg of  
of  
ibuprofen in a film 2.2 cm x 3.2 cm.

L20 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2006 ACS on STN  
ACCESSION NUMBER: 1978:154728 CAPLUS  
DOCUMENT NUMBER: 88:154728  
TITLE: Water-resistant moldings based on pullulan  
INVENTOR(S): Mori, Atsuo; Namazue, Isamu; Nakae, Kiyohiko;  
Terazawa, Takayuki; Ochiai, Hidekazu  
PATENT ASSIGNEE(S): Sumitomo Chemical Co., Ltd., Japan; Hayashibara  
Biochemical Laboratories, Inc.  
SOURCE: Ger. Offen., 12 pp.  
CODEN: GWXXBX  
DOCUMENT TYPE: Patent  
LANGUAGE: German  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2737947	A1	19780302	DE 1977-2737947	19770823
JP 53026867	A2	19780313	JP 1976-101301	19760824
FR 2362888	A1	19780324	FR 1977-25525	19770822
FR 2362888	B1	19811016		
GB 1559644	A	19800123	GB 1977-35313	19770823
PRIORITY APPLN. INFO.:			JP 1976-101301	A 19760824

AB Moldings prepared from a mixture of pullulan [9057-02-7] and Na alginate [9005-38-3] were treated with aqueous CaCl<sub>2</sub> to prepare water-resistant moldings. Thus, a solution of 95:5 pullulan-Na alginate was cast on a surface and dried to prepare a film which was immersed in 5% aqueous CaCl<sub>2</sub> for 30 s to prepare a transparent, water-resistant film.